THE ROLE OF FINANCIAL EDUCATION IN A CHOICE OF FUND SUPERANNUATION SYSTEM

by

Michael Ntalianis

Bachelor of Business — **Footscray Institute of Technology**
Master of Business — **Victoria University**

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Statement of Originality

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Abstract

The primary objectives of this thesis were to evaluate whether superannuation fund provided educational resources provide superannuation defined contribution fund members with the required information to assist them in making informed choices regarding their superannuation investment funds; and to determine the importance users place on this information for their overall superannuation investment decision making. It was also an objective to determine which educational resources were not being used by defined contribution fund members and why members failed to use them. The importance placed by defined contribution fund members on other non-superannuation fund financial education resources for superannuation decisions was also investigated.

The study was motivated by the growing literature that suggests that individuals fail to conform to rational economic behaviour when it comes to saving for retirement. The literature shows that many individuals lack the capacity or willpower to adequately plan or execute a retirement savings plan. Individual behavioural traits such as inertia, procrastination and heuristics, lead to behaviour that was inconsistent with the economic retirement savings model (life-cycle model). It was found in the literature that workers exposed to financial education were more likely to save and have a better retirement savings plan. The review of the literature shows that the educational seminar, website, written communications and financial counselling were all effective educational resources that changed an individual's retirement savings and investment behaviour.

To address the research objectives, a web-based questionnaire survey was electronically mailed to a cross-section of university staff purposively chosen from 26 universities across Australia. Both academics and non-academics were represented in the sample. The survey yielded a response rate of 30.1 percent. The responses to the questionnaire indicated that a large majority of respondents considered the superannuation fund provided educational resources to be important for their superannuation financial decision making. It was shown that the superannuation fund written communications were the most used educational resource and that financial counselling was the least used. The respondents believed they were being informed on superannuation matters when they utilised the superannuation fund provided educational resources. A lack of time and a lack of motivation were factors that received most agreement from respondents as reasons for not utilising the superannuation fund educational resources. Friends and colleagues were also found to be an important information resource when it came to a respondent's superannuation decision making.

Statistical inferences drawn from the data indicated that certain demographic groups were less likely to utilise both the superannuation fund provided resources and other non–superannuation fund educational resources. Females, younger individuals, those with low superannuation balances or low knowledge of financial matters were the key groups identified as less likely to utilise the educational information offered to them by the superannuation fund and from other sources.

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TABLE OF CONTENTS

Tables

Figures

Diagrams

List of Abbreviations

ABS	Australian Bureau of Statistics
AFSL	Australian Financial Services Licence
AIST	Australian Institute of Superannuation Trustees
ALP	American Life Panel
ANOVA	Analysis of Variance
APRA	Australian Prudential Regulation Authority
ASIC	Australian Securities and Investment Commission
ASFA	The Association of Superannuation Funds of Australia
ATO	Australian Taxation Office
AWA	Australian Workplace Agreement
AWOTE	Average Weekly Ordinary Time Earnings
CEDA	Committee for Economic Development of Australia
CEO	Chief Executive Officer
EBRI	Employee Benefit Research Institute
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs
FSR Act	Financial Services Reform Act 2002
GDP	Gross Domestic Product
HESTA	Health Employees Superannuation Trust Australia
HSD	Honestly Significant Difference
LMR	Lost Members Register
LSD	Least Significance Difference
MCIC	Metro Chicago Information Centre
MPT	Modern Portfolio Theory
MTAWE	Male Total Average Weekly Earnings
OECD	Organisation for Economic Co-operation and Development
PSS	Commonwealth Public Sector Superannuation Scheme
PPA	Pension Protect Act
RBL	Reasonable Benefits Limit
ROA	Return on Assets
RSA	Retirement Savings Accounts
SCT	Superannuation Complaints Tribunal
SD	Standard Deviation
SEARS	Survey on Employment Arrangements, Retirement and Superannuation
SG	The Superannuation Guarantee (Administration) Act 1992
SIS Act	Superannuation Industry (Supervision) Act 1993
SMSF	Self-Managed Superannuation Funds
SSAU	Australian Superannuation Scheme for Australian Universities
TIAA-CREF	Teachers Insurance and Annuity Association, College Retirement Equities Fund
US	United States

Chapter One

Introduction

1.1 Background to the Research

As a result of declining mortality and fertility rates in OECD (Organisation for Economic Co-operation and Development) countries the population is ageing. In Australia, it is projected that life expectancy will increase to 86 years for men and 90 years for women by the year 2047 (The Treasury 2007). The implications are that there will be a decrease in the ratio between working age Australians and retirees. This is expected to lead to higher government spending and a reduction in Gross Domestic Product (GDP) (The Treasury 2007) and compromise the living standards of Australians (Committee for Economic Development of Australia (CEDA) 2004). Given an ageing population, adequate retirement funding is of increasing importance to individuals who will experience longer periods in retirement. At present, a means tested government provided age pension, superannuation and voluntary savings underpin Australia's retirement system. The subject of ensuring adequate retirement income has attracted increasing attention around the developed world in recent years (OECD 2005; 2008a). There is also growing survey evidence, both in Australia and the United States, which shows that individuals are not adequately preparing or saving for their retirement (ANZ A.C.Nielsen 2005; ANOP Research Services 2006; Helman, Greenwald, VanDerhei & Copeland 2008).

In 1992 the Australian government introduced a compulsory employer superannuation system where employers are required to contribute to their employees' superannuation fund. Superannuation represents a form of saving where money is set aside by the worker and/or the employer and invested for each employee's retirement benefit. The Treasury (2002) in the first Intergenerational Report identified superannuation as one structure that can counter the impact of an ageing population. When first introduced, the Australian superannuation guarantee system required minimum employer annual contributions of three percent which was progressively increased to its current level of nine percent. Recently, superannuation stakeholder groups have suggested that a

further increase in the contribution rate is necessary to ensure individuals derive sufficient superannuation savings for retirement.

In 2008 superannuation assets in Australia were reported to be in excess of $1 trillion (APRA 2009a). A report from the Australian Bureau of Statistics (ABS) (2008) indicates that 91 percent of employed people have superannuation coverage. However, there is still considerable doubt about whether Australians will have sufficient balances in their superannuation accounts to support them adequately in retirement (Clare 2008a). CEDA (2004) also suggests that many Australians will find that their level of savings will be inadequate for retirement.

Another important development in superannuation fund (referred to as pension funds in some countries) arrangements in the OECD countries is the shift from defined benefit to defined contribution (accumulation) funds (OECD 2005). This shift is especially important in Australia where a majority of superannuation fund members have defined benefits (APRA 2009b). A defined benefit fund uses a formula for calculating the member's retirement benefit, which is specified in terms of years of employment and average salary level prior to retirement. Under defined contribution funds each member has their own account where contributions and investment earnings are added and fees deducted. The balance in the account represents the funds available for retirement funding. Therefore, with defined contribution funds the member bears the investment risk, whereas with defined benefits this risk is carried by the fund. The OECD (2006, p. 1) acknowledges that:

> …the responsibility and risk for financial decisions that will have a major impact on an individual's future life, notably pensions, are being shifted increasingly to workers and away from government and employers.

The OECD (2006, p. 3) advises governments that: "future retirees should be made aware of the need to assess the financial adequacy of their current public and private pensions schemes". Of significance is the increasing responsibility of individuals to provide for their own retirement. The OECD (2005, p. 11) expects that:

> An increasing number of workers will have to rely on defined contributions pensions and their personal savings to finance their retirement as governments begin scaling back the benefits of state-supported social security programmes and as the number of employers offering benefits plans decreases.

1.2 Research Problems and Objectives

The objectives in this research are to evaluate a financial education model to determine whether it provides superannuation defined contribution fund members with the required information resources to assist them in making informed choices regarding their superannuation investment funds; and to determine the importance users place on this information for their overall superannuation investment decision making. The resolution of these research problems requires an evaluation of the role financial education plays in providing advice, information and instruction to superannuation fund members about their superannuation savings and investment strategy.

Moreover, the research will determine which parts of superannuation fund provided financial education are not being used by defined contribution fund members; and the reasons members are not utilising these particular aspects of education. It will also determine the importance placed by superannuation fund members on other non-superannuation fund provided financial education for their decision making.

Research indicates that employers and fund managers use educational resources such as seminars and workshops, written communication, websites and financial counselling to educate employees about retirement saving (Bernheim 1998; Ernst & Young LLP Human Capital 2004; Krajnak, Burns & Natchek 2008). It has also been shown that these educational resources can influence an individual's retirement saving intentions and behaviour (Clark & Schieber 1998; Lusardi 2003; Muller 2003; Nyce 2005). In this study, investor attitude towards the level and adequacy of financial information and education provided by superannuation funds for their retirement savings is investigated.

The Australian federal government has legislated to allow superannuation fund members a choice of which fund they join and the ability to switch to other funds. Superannuation defined contribution fund members also have investment choice within the fund so that they can choose where to place their funds from a menu of available investment options. Therefore, the level and adequacy of information provided by superannuation funds to members making investment choices needs to be determined. Whether members exercising choice use the information supplied, and whether this contributes to them being informed on superannuation issues also needs to be determined. An outcome of this study is the specification of a superannuation educational model (refer Chapter 3, Figure 3.4) which meets the requirements of defined contribution fund users for information, instruction, and advice. Further investigation has been undertaken to determine the reasons why superannuation fund members fail to use certain components of the educational resources provided by the superannuation fund, and the importance they place on non-superannuation fund provided educational resources for their decision making. The literature review showed that individuals have a preference for receiving information on financial issues through television, radio, magazines, and newspapers (Hilgert, Hogarth & Beverly 2003), and further, they rely on financial advice from friends and colleagues for making retirement saving decisions (as found by Benartzi & Thaler 1999; Duflo & Saez 2002).

In order to achieve the research objectives, it has been necessary to:

- determine the level of use of the various superannuation fund provided educational resources;

- determine whether the superannuation fund provided educational resources are meeting the users' expectations for information, instruction and advice;

- determine how individual users rate these educational resources for their superannuation investment decision making;

- determine the reasons investors fail to use the superannuation fund provided educational resources;

- evaluate the importance placed by users on these educational resources for their overall decision making on superannuation matters; and,

- determine how frequently the superannuation fund educational resources are accessed by members.

1.3 The Justification for the Research

Economic theory assumes that individuals will exhibit rational behaviour when it comes to saving for retirement (Modigliani & Brumberg 1954). This economic (life-cycle) theory assumes that individuals will accumulate sufficient wealth to allow them to enjoy an expected standard of living in retirement. However, behavioural research evidence suggests that many individuals will exhibit irrational behaviour when it comes to saving for their retirement and will fail to plan and save adequately for it (Belsky & Gilovich 2000). It is suggested that individuals generally lack the mental capability and willpower required to plan and save for retirement (Mullainathan & Thaler 2000). This is reinforced by a recent survey (AXA 2008) on retirement that found that almost 50 percent of Australians were not prepared for their retirement. Therefore, assessing and improving the level of financial literacy among Australian workers who are choosing to make investment decisions for their superannuation have emerged as important issues.

The OECD (2006) emphasises the importance of financial literacy in assisting individuals to save adequately for their retirement income. Research indicates that as an individual's financial knowledge increases so will their ability to better plan and save for their retirement (Lusardi 2005). Surveys conducted by the Australian and the New Zealand Banking Corporation (ANZ A.C.Neilson 2005; ANZ 2008) and Mercer (2006) found that a significant number of Australians had a low awareness of superannuation issues.

The federal government and Australia's major banks have all emphasised the importance of consumer financial literacy. In 2003 the Australian government established a national consumer and financial literacy 'Taskforce' to develop a national strategy to raise levels of financial literacy in Australia. As part of its terms of reference, the Taskforce was asked to consider the issues of "enhancing awareness of the importance of saving and better communicating the need for a focus on retirement savings" and to consider "the availability of financial information and education to maximise superannuation and retirement savings" (The Treasury 2003). An OECD report (OECD 2005) on improving financial literacy emphasised the need for and potential benefits of financial education for retirement savings, while an ANZ A.C. Nielsen survey (2005, p. 3) indicated that "a minority of those surveyed had calculated how much they needed to save for retirement".

Some studies have shown that financially educated consumers are more likely to save and to save more than their less financially literate counterparts (Bayer, Bernheim & Scholz 1996; Clark & Schieber 1998; Lusardi 2005; Clark et al. 2006). An OECD July policy brief (OECD 2006) further supports the notion that financially educated individuals are more likely to save and, furthermore, to challenge financial service providers to provide products that meet their investment needs. The OECD report identifies the complexity of financial products and markets as factors making financial education increasingly important. Another OECD report (2008a, p. 119) states that:

> Financial education can contribute to the well-being of workers in retirement by providing them with information and skills to make wise investment choices with both their pension plans and any individual savings plans.

This study contributes significantly to knowledge, as there is a gap in the research evaluating the adequacy and effectiveness of financial information and education for superannuation saving in an Australian context. The majority of research in Australia has been largely confined to surveys seeking to identify levels of financial and superannuation literacy (ANZ A.C.Neilson 2005; ANZ 2008). Other Australian research has been driven more by why investors fail to make active superannuation choices, why they find these choices difficult, the role of a default fund option (Clark-

Murphy, Kristoferson & Gerrans 2002; Brown, Gallery & Gallery 2002; Gallery, Gallery & Brown 2004), and the extent to which superannuation fund provided educational resources were used to make a decision on whether or not to switch from a defined benefit fund to a defined contribution fund and the importance they played in this decision (Clark-Murphy & Gerrans 2001).

This study extends previous research in Australia by determining whether superannuation fund provided information and education is adequately structured and communicated to meet the needs of individuals exercising investment choice so that they can make appropriate financial decisions for their retirement funding. The importance of this matter is reinforced by an OECD report (OECD 2005) titled: 'Improving Financial Literacy' where it is stated that "there is much more to do and learn about financial education programmes and how to make them better" (p. 16).

1.4 Scope of the Study

An Australian university industry superannuation fund is the source for data collection in this study. Other categories of funds such as retail and wholesale funds were considered but gaining access to the required data was problematic.

The focus in this study is on superannuation fund members who are part of a defined contribution plan and have made, and may again in the future, make investment decisions involving the allocation of their accumulated savings to various investment plans offered by the superannuation fund, an action described as 'within fund choice'. The retirement wealth of these members is directly influenced by the investment choices they make. Therefore, informed investment choice is of vital importance and strongly linked to their financial understanding of the alternative investment choices.

It is not within the parameters of this study to capture those superannuation investors who are pursuing passive choice by opting for a defined benefit at retirement. Their wealth outcome is based on a formula which encompasses, as previously noted, their average salary and years of employment. In a defined benefit plan the members'

investment allocation decisions and the investment risks are the responsibility of the fund.

It is the distinction between defined benefits and defined contribution plans that emphasises the importance of financial education to those superannuation investors who are exposed to the investment risks that flow from their investment choices. It is for this reason that financial education is of vital importance to these investors. Without appropriate financial knowledge they may lack the prerequisite skills for ensuring that they make the informed choices necessary to produce the financial outcomes necessary for their retirement.

1.5 Methodology

The aim in this study is to examine the attitudes of superannuation defined contribution fund members about the educational resources provided to them by their superannuation fund. A survey approach was adopted to obtain the data necessary to address the research questions. The survey approach to research is regarded as the best method for gathering data from large unobservable populations (Babbie 2008). Because of the geographical dispersion of the sample an electronically mailed questionnaire (web-based survey) was used to ascertain members' perceptions of the benefit of educational information in enabling them to make informed decisions regarding their superannuation. The decision to use an electronic questionnaire was made after consideration of both the advantages and disadvantages of different survey types. This decision process was guided by the Trochim (2006) framework (see Chapter 4: Section 4.5.1).

The sample was drawn from an Australia-wide university sector and was specifically targeted to those superannuation fund members who had a defined contribution fund. The sample comprised 5000 staff from 27 Australian universities. Defined contribution fund members were chosen as they actively participate in the investment decision making process by nominating where their funds will be invested from a list of available investment options.

Five-point rating scales were used in the questionnaire to allow for the measurement of agreement (attitude), intensity and frequency to responses from prepared statements and questions. A Likert scale was used to measure the respondents' strength of agreement to a statement; frequency scales were used to determine how often respondents accessed each educational resource provided by the superannuation fund; and intensity scales were used to determine the importance respondents placed on educational information.

The questionnaire was divided into six parts, namely: demographic and background questions; educational seminar; superannuation fund website; superannuation fund written communications; superannuation fund provided financial counselling; and, other sources of educational information and superannuation fund account balance. Information collected in the questionnaires was used to test whether four variables: financial education seminars; web-based education information; written communications; and, personal financial counselling lead to a perception of informed decision making by superannuation fund members, and to validate the theoretical model.

Prior to final administration, the questionnaire was tested on a group of university staff to ensure that the layout, sequencing and wording of questions were appropriate and easily understood, and to also test for reliability and validity. Feedback from testing the questionnaire led to some minor changes to question format, sequence, order, and layout. A researcher must also ensure that the survey instrument is reliable and valid. A reliable survey will yield consistent responses from the questions asked, whereas, a valid survey measures what it is actually supposed to measure. Measures were adopted to ensure that the survey instrument was both reliable and valid (see Chapter 4: Section 4.5.5).

The data collected were analysed using the statistical analysis software Statistical Package for Social Sciences (SPSS) Version 14.0. The data were subjected to parametric and non-parametric tests where appropriate, including analysis of variance (ANOVA).

1.6 Outline of the Thesis

The thesis is organised into seven chapters. The present chapter provides a background to the study, the objectives, the justification for the research, the scope of the study and an overview of the research methodology.

Chapter Two provides an overview of the Australian superannuation framework. It also incorporates discussion on the Australian retirement system, implications of an ageing population, the mechanics of the choice of fund superannuation system, the composition and size of the superannuation system, regulation and taxation of the system, and an assessment of the adequacy of superannuation savings.

Chapter Three provides an outline of the life-cycle model, and the implications of the behavioural finance theories and the literature on the life-cycle model for retirement saving is assessed. A theoretical framework for superannuation fund choice is introduced and the importance of financial education for retirement savings is discussed. A review of the literature is conducted to evaluate the relevance of financial education for planning and saving for retirement. Also in this chapter, the theoretical framework for the research and the research model for superannuation education are determined, and research questions are developed.

Chapter Four focuses on the methodology used to examine the impact of financial education in a choice of fund superannuation system. The chapter initially provides a discussion of the paradigm and methodology for the research. Justification for administering an electronic mail questionnaire is then provided. Details are provided on the construction and the administration of the questionnaire. There is also discussion on how the sample was chosen and how measurement issues relating to validity and reliability were considered and addressed.

The descriptive results of the study are reported in Chapter Five. The statistical techniques used were frequencies, mean (measure of central tendency) and standard deviation (measure of dispersion). The results obtained from the statistical analysis were then used to answer the research questions. Further results were also reported on

the Cronbach alpha for reliability of survey measurement scales, and the response rate to the survey was provided.

The inferential statistical results are reported in Chapter Six. Tests of significance are discussed and a significance level chosen. Analysis of variance and chi-square tests of independence are used to determine whether demographic and background group responses to variables differed from one another.

Chapter Seven presents a summary of the overall study and highlights the findings. Furthermore, a number of recommendations and suggestions for further research are provided and the limitations of the study are discussed.

Chapter Two

An Overview of the Australian Superannuation Framework

2.1 Introduction

The provision of retirement income has become a challenge for governments across the world. The population is ageing as a result of lower mortality and fertility rates. An ageing population will place financial stress on government budgets, as spending on welfare increases, which will be further compounded by a proportional reduction in working age taxpayers. In 1992 the Australian government introduced a compulsory superannuation charge on employers to assist employees to save for their retirement. Even though savings in superannuation have increased significantly over the years, a number of Australians will have insufficient savings to fund fully their retirement. Harding (2005, p. 2-3) suggests that:

> In essence, the poorest one-half of 50 to 64 year olds have almost no wealth to help sustain them through the decades of retirement that lie ahead of them.

More recent changes by the government to the superannuation framework such as a simplification of the superannuation system, government co-contribution, choice of fund, assistance with finding lost superannuation accounts, and superannuation tax incentives, have emphasised the importance the government places on superannuation as a mechanism supporting future generations of Australians in retirement. The discussion that follows is aimed at providing a review of Australia's retirement income system with a particular focus on superannuation.

2.2 Australia's Retirement Income System

Australia has a three-pillar approach to providing retirement income. The three pillars that currently underpin Australia's retirement system are as follows: a means tested government provided age pension; a system of compulsory superannuation for

employees provided by the employer at a minimum prescribed level; and voluntary savings, including both superannuation and non-superannuation savings. The World Bank has broadly endorsed Australia's three-pillar approach to providing retirement incomes (The Treasury 2004). A World Bank Report (World Bank 1994) advocated a three-pillar system comprising a publicly tax-funded pension, a compulsory privately managed and funded retirement benefit scheme, and a voluntary savings component as the third pillar. It has been stated that even though the Australian retirement income system may possess some defects, it has become something of a role model for developing countries (Clare 2008b). A recent government commissioned report (Harmer Report 2009) on Australia's retirement system has recommended that the existing three-pillar system should be retained.

2.3 The Australian Aged Pension

The first pillar of the retirement income system in Australia, the aged pension, provides a guaranteed means tested income. A World Bank Report prepared by Holzmann and Hinz (2005, p. 6) recommends that:

> The primary goals of a pension system should be to provide adequate, affordable, sustainable, and robust retirement income, while seeking to implement welfare-improving schemes in a manner appropriate to the individual country.

The Australian aged pension is funded directly from government revenue and is payable to eligible recipients. Around 75 percent of Australians who have reached the eligible pension age receive a government pension (Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) 2008a). Currently, Australian resident males are eligible to receive the aged pension if their income and assets are below a certain amount and they are aged 65 or over. Resident females are also subject to the same income and assets tests; qualifying age varies between 63 and 65 years based on the year of birth, but will ultimately become 65. As part of its 2009-2010 budget measures the Australian government plans to increase progressively the eligible pension age to 67 by the year 2023. The annual aged pension in February 2009 was $14,614.60 for a single person and a combined $24,414.00 for a couple,

with further possible benefits such as utilities allowance, pharmaceutical allowance, telephone allowance, and rent assistance subject to eligibility (Centrelink 2009). In 1997 the government legislated to ensure that the maximum single rate of pension is at least 25 percent of 'Male Total Average Weekly Earnings' (MTAWE) (FaHCSIA 2008a). The Association of Superannuation Funds of Australia (ASFA) Policy Principles indicate that there is broad political and community support in Australia for an aged pension funded out of general revenue (Clare 2008b). As part of its 2009-10 budget measures and in line with the Harmer Report (2009) recommendations the Australian government has announced an increase in the single aged pension of up to $32.49 a week and $10.14 extra a week for couples.

2.3.1 Poverty Measures and the Aged Pension

The Melbourne Institute of Applied Economic and Social Research (2009) poverty line measures for the September quarter 2008, is $453.95 per week ($23,605.40 annually) for pension couples and $320.47 per week ($16,664.44 annually) for a single aged pensioner. A comparison with the pension payment figures above suggest that aged pensions are not far from the poverty line. Another comparison of the aged pension with a traditional poverty benchmark of 50 percent of median income presents a similar picture (Clare 2008b). However, it is important to note that these poverty measures represent an Australian, not an international standard. In a recent annual survey conducted by McNair Ingenuity Research (2008) on behalf of ASFA, respondents indicated that on average an amount of $49,118 per annum in retirement income for couples was required in order to maintain an adequate lifestyle. Based on these comparisons the McNair survey group would not be able to maintain an adequate lifestyle on the aged pension. FaHCSIA (2008a) reports that many pensioners rely on income support for long periods and that most pensioners have low incomes. Therefore, to generate the retirement income required to support an adequate lifestyle, wealth will need to be created with either superannuation and/or voluntary savings.

In May 2008 the Minister for FaHCSIA commissioned an investigation by Dr Jeff Harmer (Secretary FaHCSIA), into measures to strengthen the financial security of

seniors, carers, and people with a disability, including a review of the aged pension. The Pension Review is part of the Government's wider enquiry into Australia's future tax system and is chaired by the Secretary to the Treasurer, Dr Ken Henry. The Pension Review has three key terms of reference (FaHCSIA 2008b):

- the appropriate levels of income support and allowances;
- the frequency of payments; and,
- the structure and payment of concessions or other entitlements.

The Association of Superannuation Funds of Australia (ASFA) (2009a, p. 1) suggested that the Harmer pension review "needs to demonstrate how the Government can achieve a balance between providing a safety net through the aged pension and encouraging people to self-fund their retirement". The Harmer pension review report released by FaHCSIA on 12 May 2009 developed 30 findings across five major areas. The report made recommendations such as increasing the pension rate, increasing the pension qualifying age, better indexation arrangements for pensions and, less complexity and better support for those over the pension age seeking to participate in the workforce (Harmer 2009).

2.4 Implications of Australia's Ageing Population

The second Intergenerational Report (The Treasury 2007) explains that Australia, like other OECD countries, is experiencing an ageing of its population driven by declining mortality rates. The Intergenerational Report projects future mortality rates to fall by 2047, with life expectancy to increase to 86 years for men and 90 years for women: about 25 percent of the population is projected to be aged 65 and over, almost doubling the current proportion. The number of people aged 55 to 64 is projected to increase by nearly 50 percent, over the next 40 years. The Report acknowledges the recent increase in the fertility rate, but suggests that it is still significantly below the replacement rate. The most commonly used indicators of population ageing are the proportion of the population aged 65 and over (FaHCSIA 2004). Another common measure of population ageing is the dependency ratio which is used to measure the

people aged 65 and over compared to the population of working age (15-64) (FaHCSIA 2004). Harding (2005, p. 1) explains that:

> In 1960 there were about 7.3 working age Australians to help support each retiree aged 65 years and over. By 2040 there are forecast to be only 2.4 working age Australians for each retiree aged 65 and over.

According to the second Intergenerational Report (The Treasury 2007) there are currently 5 people of working age to support every person aged 65 or over, and this is expected to fall to 2.4 by 2047. Many of the concerns surrounding the issue of an ageing population are of an economic nature (Drabsch 2004). As a result of an ageing population the second Intergenerational Report (The Treasury 2007) estimates that by 2046-47, the gap between spending and revenue will grow to 3.5 percent of GDP. It is also reported that over the next 40 years, the ageing of the population is projected to slow economic growth. The impact of higher government spending and slowing GDP is predicted to send the Federal Government budget into deficit and higher taxes may have to be imposed on future generations of taxpayers. CEDA (2004, p. 1) suggests:

> The ageing of Australia's demographics has taken on greater public policy significance, as it presents major challenges about how Australia should address the economic, fiscal and social impacts, including the impact on the future growth in living standards of Australians.

Earlier, the first Intergenerational Report (The Treasury 2002) identified the superannuation system as one of the structures that is in place that can counter the impact of an ageing population. The Australian government has sought to reduce future economic pressure resulting from an ageing population by encouraging the Australian public to save for retirement through mechanisms such as compulsory employer superannuation contributions, taxation incentives and superannuation co-contributions. Alliance Strategic Research (2008) suggested that because of the economic importance of superannuation savings there is considerable input into policy decisions from the finance and economic sectors and that the superannuation portfolio is placed in Treasury, rather than in the Department of Families, Housing, Community and Indigenous Affairs which has the responsibility for pensions.

Therefore, the second and third pillars of Australia's retirement income system, (superannuation; voluntary savings), will play a vital role in future in providing retirement income for a substantial proportion of the population and it will also provide a counter-balance against future government expenditure.

2.5 Superannuation in Australia

Superannuation as a form of savings has existed for more than a century in Australia and for the majority of this time was only applied to a small segment of the working population such as white collar workers, public servants, members of the defence force, and employees in the finance sector. The introduction of a formalised employee superannuation scheme occurred in 1986 when industrial agreements were reached to provide for a three percent employee contribution paid into an industry fund. As a consequence, superannuation coverage increased from 40 percent of employees to 79 percent in the following four-year period (APRA 2007). However, coverage was limited only to those covered by an industrial award. APRA (2007, p. 3) states that this award based system had a number of problems including:

- nearly one-third of private sector employees remained uncovered by 1991;
- not all employees who were entitled to award superannuation received it, in part because compliance could not be enforced through a laborious case mounted with the Conciliation and Arbitration Commission;
- award superannuation as a universal entitlement did not effectively take into account the significant number of employees who already had some superannuation rights as part of their employment; and,
- the three percent award was too small to provide a significant improvement in retirement incomes for many employees.

The second pillar of Australia's retirement system, compulsory superannuation, was not adopted until 1 July 1992. The new system was known as the Superannuation Guarantee (SG). The SG was enforceable through the Commonwealth's taxation powers under The Superannuation Guarantee (Administration) Act 1992. The SG

commenced with employer contributions set at three percent of salary. The employer contribution rate was increased over a ten-year phase to a maximum rate on 1 July 2002 of nine percent. The SG has to be paid if an employee earns $450 (pre-tax) or more per month and is aged between 18 and 70 and works full-time, part-time or on a casual basis. An employer must also pay the SG if an employee is under the age of 18, is paid $450 (pre-tax) or more per month, and works more than 30 hours in a week either full-time, part-time or on a casual basis (Australian Taxation Office (ATO) 2008).

The SG is enforced by the ATO. As the SG is governed by Commonwealth powers it provides for:

- a major extension of superannuation coverage to employees not already covered by superannuation;
- an efficient method of encouraging employers to comply with the obligation to make contributions on behalf of their employees; and,
- a mechanism by which the level of employer superannuation support could be increased over time, consistent with the Government's retirement income policy objectives and the economy's capacity to pay. (APRA 2007, p. 4)

2.5.1 Superannuation Co-contribution

The superannuation co-contribution was introduced from 1 July 2003 to assist low and middle income earners to save for their retirement. The co-contribution is made by the government to an individual's superannuation account. The government contributes up to $1.50 for every dollar of personal superannuation contributions made from after tax income, up to the current maximum of $1,500 per year of income. The maximum entitlement of $1,500 is reduced by five cents for every dollar that is earned over $30,342 up to $60,342. Australian Taxation Office (ATO 2009a) rules provide that from 1 July 2008, a person is eligible for the co-contribution if:

- they make a personal contribution by 30 June each year into a complying superannuation fund or retirement savings account;
- their total income is less than $60,342 (indexed to changes in average wages);
- 10% or more of their total income is from eligible employment, running a business or a combination of both;
- they are less than 71 years old at the end of the year of income;
- they do not hold an eligible temporary resident visa at any time during the year; and,
- they lodge an income tax return.

As part of its 2009-10 budgetary measures the Australian Government announced that as of 1 July 2009 it will reduce its matching of superannuation contributions by workers earning less than $60,342 from $1.50 for every dollar contributed to $1.00 for every dollar contributed for the years 2009-10, 2010-11 and 2011-12 income years and, a matching rate of 125 percent for the 2012-13 and 2013-14 years. Beyond this period the matching rate will revert to 150 percent.

Nielson (2005) found that the co-contribution scheme delivered a number of benefits, particularly to women and the baby boomer age group. He found that 63 percent of the beneficiaries of the co-contribution were women, and 47 percent were aged between 46 and 65. It is acknowledged by Neilson (2005) that this benefit alone will not alleviate the problem of small superannuation balances of low income earners. A recent survey of three industry funds was conducted by the Australian Institute of Superannuation Trustees (AIST 2008). Their funds data showed that over the three years surveyed (2004-2007) participation in the co-contribution scheme increased from 6.1 to 9.9 percent. However, based on income levels, they estimated that 56 percent of the survey groups were within the eligible income range. The survey findings are summarised as follows (AIST 2008a, p. 1):

- apathy and affordability are the major barriers to participation;
- participation is skewed heavily to older workers;
- household income and dependents are key factors in participation;
- co-contribution scheme is effective in changing savings behaviour;

- high levels of awareness of the scheme generally;
- women are likely to participate and have higher awareness; and,
- better access to advice from superannuation funds required to convert positive disposition into action.

The research identified that the scheme failed to benefit many young families and those on low incomes. Those with young families or low incomes might lack the disposable income required to contribute to the scheme. The main beneficiaries of the scheme were older people with disposable income. It also shows that participation in the scheme is impacted by individual apathy. The recommendations of the AIST report (2008a, p. 1) are as follows:

- split the co-contribution scheme into $500 direct subsidy for very low income workers, and retain the existing scheme on a dollar-for-dollar basis for low and middle income earners;
- raise the phase-out range to $35,000-$75,000 income levels;
- further research required to target specific groups in awareness campaigns; and,
- government and superannuation industry to develop cost-effective limited advice channels to improve conversion of positive disposition into action.

2.5.2 Choice of Fund

The SG legislation makes no specific provision in regard to which fund employers should make their mandatory contributions, only that it should be a 'complying fund' for the purposes of the Superannuation Industry (Supervision) Act 1993 (see also Section 2.7). For administrative simplicity it was common for employers to pay the entire superannuation contribution into the relevant industry fund (APRA 2007).

Legislation was first introduced in 1997 and then passed in 2004 allowing 'choice' of superannuation fund. Beal and Delpachitra (2004, p. 128) comment that:

> The issue of choice, and especially informed choice, has been widely acknowledged as vitally important to the success of the superannuation policy.

The Superannuation Guarantee (Administration) Amendment Regulations 2005 that came into effect on 1 July 2005 generally allowed employees to nominate any complying fund into which the employer must pay their superannuation guarantee contributions. Trustees of the fund were also required to transfer any 'superannuation accumulation withdrawal benefit' to another fund on the request of a member. The ASFA Research Centre estimates claimed that after 1 July 2005 some 5.7 million Australians had the statutory right to choose their fund (Clare 2005). ATO rules (ATO 2009b) provide that a person will not be eligible to make a choice of fund if:

- their superannuation is paid under a state award or industrial agreement;
- their superannuation is paid under certain workplace agreements including an Australian Workplace Agreement (AWA) (although choice can also be provided under these awards and agreements); and,
- they are in a particular type of defined benefit fund or they have already reached a certain level of benefit in that superannuation fund.

Some federal and state public sector employees are also excluded from choice of superannuation.

The 2006 ANOP Survey commissioned by ASFA found that only four percent of their sample actually exercised a conscious act of choosing a fund. A recent survey conducted by McNair Ingenuity Research (2008) on behalf of ASFA found that eight percent of respondents indicated that they had changed superannuation funds in the last 12 months. Gunasingham and Zavone (2005, p. 4) claimed the following benefits for the introduction of greater choice:

- consumers will win sovereignty over their superannuation;
- increased competition will lead to downward pressure on fees and charges; and,
- competition will drive innovation.

2.5.3 Lost Superannuation Accounts

Senator Nick Sherry, Minister for Superannuation and Corporate Law, recently announced that the total of lost member superannuation accounts listed on the Lost Members Register (LMR) rose from 6.1 million accounts on 30 June 2007 to 6.4 million accounts at 30 June 2008 (Sherry 2009). The amount of lost superannuation increased from $11.9 billion in superannuation assets on 30 June 2007 to $12.9 billion on 30 June 2008, representing an increase of 8.4 percent. The Treasury (2008a) acknowledges that the growth in the number of lost accounts on the LMR is mainly due to a lack of engagement by many members with their superannuation. Lost superannuation may result in circumstances where members fail to rollover their benefits from one superannuation fund to another, change jobs, change their name or fail to contact their fund when they change residence. Certain individuals may also lack an awareness of their superannuation accounts. The Treasury (2008a, p. 15) suggest that:

> Given the small balances of many of these accounts there is little incentive for members to stay in contact with their fund or to complete the paperwork for the release or transfer of these benefits.

Bateman (2008) notes that significant costs associated with lost superannuation accounts are borne by individuals, superannuation funds and government. Individuals will retire with less saving. Superannuation funds will have to deal with the administrative costs associated with lost accounts, such as, mandatory reporting. The government also bears the costs of maintaining the administrative structure for lost accounts, and higher pension payments may also result in lower superannuation savings. Therefore, superannuation fund member education on the benefits of retirement savings may invoke both interest and ownership of these lost accounts.

Under the current legislation, The Superannuation (Unclaimed Money and Lost Members) Act 1999, superannuation funds are required to report (semi-annually) the details of member accounts considered lost, to the ATO. The ATO keeps a list of names of people who have been reported by their superannuation funds as lost. The register includes details of lost members for accounts held by: superannuation funds;

approved deposit funds; eligible rollover funds; and retirement savings account (RSA) providers. A person's name may appear on this list when the superannuation fund is unable to make contact or no contributions have been received from the person in the last five years. Monies from a lost account are not transferred to the ATO; instead the account remains with the superannuation fund and is invested by it or it may be transferred to an eligible rollover fund. The ATO has set up an internet-based tool, SuperSeeker, that will assist a person looking for lost superannuation that instantly provides a person with possible matches. SuperSeeker searches the LMR and the ATO's other records to find possible matches for the lost superannuation. When searching for lost superannuation through SuperSeeker, the person needs to provide their name, date of birth and tax file number. The ATO also provides SuperMatch, an electronic commerce interface designed to provide tax agents, financial advisers, financial planners and accountants with access to the LMR. This system allows a search to be conducted on behalf of a person. If a balance of a lost account contains less than $200, a person may be able to withdraw it from the fund tax-free. It is also an aim of the ATO to make it easier to find and transfer lost superannuation in future (The Treasury 2008a). Furthermore, the government has announced that from 1 July 2010, superannuation funds will be required to transfer to the ATO as unclaimed monies, those accounts with balances less than $200 and those accounts that have been inactive for a period of five years and have insufficient information to identify the owner of the account (Corrs Chambers Westgarth 2009).

2.5.4 Superannuation Clearing House

In the 2008-09 budget, the government announced that it would provide $16 million over a three-year period to establish a superannuation clearing house facility. The Treasury (2008a, p. 3) suggests that:

> The measure is designed to reduce the red tape and compliance costs for business associated with meeting their superannuation obligations.

The Treasury (2008a, p. 3) notes that: the superannuation clearing house facility will be:

- optional for employers;
- it will be contracted to the private sector, manage employers' obligations under superannuation choice; and,
- be available free to small businesses with less than 20 employees.

However, consultation with industry will have to occur before the measures are implemented.

2.6 Composition and Size of Australia's Superannuation Industry

APRA recognises five superannuation fund types. These include corporate funds, industry funds, public sector funds, retail funds, and small funds. The APRA (2007, pp. 46-49) definitions are summarised in Table 2.1.

Table 2.1 Definitions of Superannuation Fund Types

Type of Fund	Definition of Superannuation Fund Types
Corporate	Corporate funds are established for the benefit of a particular entity or a group of related entities, with joint member and employer control
Industry	Provide for employees working in the same industry
Public Sector	Provide benefits for Government employees or are schemes established by a Commonwealth, State or Territory law
Retail	Offer superannuation products to the public on a commercial basis*
Small	These funds have less than five members and are either regulated by APRA or the ATO

*APRA classifies all Eligible Rollover Funds (EFRs) and Approved Deposit Funds (ADFs) in the retail category.

The current structure of the Australian superannuation industry is summarised in Table 2.2. Total superannuation assets are reported to be in excess of $1 trillion, representing more than 100% of GDP. The highest level of assets is concentrated in self-managed superannuation funds ($326.4 billion), followed by retail funds with $297.1 billion in assets. Even though the corporate sector has the highest number of

funds (199) it has relatively fewer assets ($53.6 billion) when compared to other major fund types. There is a proliferation of small superannuation funds: there are 401,366 self-managed funds and another 4,433 small APRA regulated funds. The Table also identifies 66 industry funds and 40 public sector funds. Both the industry funds and retail funds have significant levels of assets ($181.1 and $149.4 billion, respectively).

Table 2.2 The Australian Superannuation Industry at December 2008

Fund Type	Assets ($ billion)	Number of Funds
Corporate	53.6	199
Industry	181.1	66
Public Sector	149.4	40
Retail	297.1	169
Sub-total	681.3	474
Small APRA Funds	2.6	4,433
Single-Member ADFs	0.1	120
Self-managed Super Funds[a]	326.4	401,366
Balance of Life Office Statutory Funds	43.2	
Total	**1,053.5.**	**406,479**

[a] Estimated data on self-managed superannuation funds are provided by the ATO.
Source: APRA (2009a, p. 7) Quarterly Superannuation Statistics, December 2008.

2.6.1 Superannuation Fund Benefit Structures

In Australia, defined benefit, defined contribution (accumulation), and hybrid are the main types of benefit structures used in superannuation funds. In a defined benefit fund the member's benefit is calculated using a formula that takes into account the years of service with an employer and the level of salary near retirement; and the superannuation fund bears all the investment risks. The defined contribution (accumulation) fund allocates benefits to members based on the investment performance of the fund assets. Returns to members will therefore fluctuate with

investment market performance; thus, fund members bear all investment risks. A hybrid fund has a combination of both defined benefit and defined contribution members. The traditional plan in Australia was defined benefits, but there has been a substantial move away from defined benefit plans towards accumulation plans (Ross & Wills 2002). In the 1980s approximately 80 percent of superannuation fund members belonged to defined benefit plans (Bateman 2008). Recent data from APRA (2009b) indicate that only around two percent of members now belong to defined benefit plans, almost 60 percent belong to defined contribution (accumulation) funds and a further 38 percent are in hybrid funds (refer to Table 2.3). Bateman (2008, p. 11) suggests that:

> This is largely because the superannuation guarantee is specified in terms of a defined contribution and while defined benefits can comply the regulations are more onerous. As well, employer sponsors are opting to shift the administrative burden associated with superannuation to commercial funds and to shift the investment risks back to fund members.

As indicated in Table 2.3, the majority of superannuation assets are in accumulation funds ($712.4 billion) and hybrid funds ($357.5 billion). The defined benefit plans hold a total of $64.3 billion from total superannuation assets of $1.13 trillion. There is also a substantial number of accumulation funds (393,910) representing 99.95 percent of the total number of superannuation funds. This trend, involving a move away from defined benefit to accumulation funds, has also been very strong in the United States (Ross & Wills 2002). However, this is not the case in Canada and the United Kingdom where the large majority of assets and members is concentrated in defined benefit funds (Broadbent, Palumbo & Woodman 2006).

Table 2.3 Distribution by Benefit Structure

Benefit Structure	Assets ($billion)	%	No of Funds	%	No. of Members ('000)	%
Accumulation	712.4	62.8	393,910	99.95	19,190	59.9
Defined Benefit	64.3	5.7	35	0.001	669	2.1
Hybrid	357.5	31.5	171	0.004	11,422	38.0
Total	1,134.2	100.0	394,116	100.0	31,281	100.0

Source:APRA (2009b: p. 27) Statistics Annual Superannuation Bulletin June 2008.

In Australia the concept of investment choice in an accumulation fund is a recent concept. Schubert (2008) explains that ten years ago, members had no choice of where their money was invested, and that now, 90 percent of accumulation (defined contribution) funds involve some level of choice. Statistics released by APRA (2009b) indicate that 62.4 percent of all funds with more than four members now offered investment choice to their members. Schubert (2008) suggests that there can be typically anywhere between 10 and 60 choices and that there is significant emphasis on multi-management of assets, active management and diversified options. APRA (2009b) statistics show that retail funds offered the greatest number of investment choices to members, with an average of 112 options per fund. Furthermore, industry funds had an average of eight investment options per fund and the public sector and corporate funds had an average of eight and seven choices per fund, respectively. The available investment options can vary from low risk (conservative), to high risk (high growth), with a default option. All superannuation funds have a default option, which is where a member's superannuation funds will be invested if they do not nominate an investment option. APRA (2009b) statistics indicate that at 30 June 2008, for entities with more than four members, 46.2 percent ($357.2 billion) of assets were held in the default investment strategy. The majority of the default strategy assets were held in both domestic and international equities (52 percent). The other allocations were in Australian fixed interest (11 percent), other assets (13 percent), property (10 percent), cash (9 percent), and international fixed interest (6 percent).

In Australia, a large number of superannuation fund members in accumulation funds are exposed to the investment risks associated with investment choices. These investment risks will impact on members' returns and will ultimately determine the amount of any retirement benefit. It is, therefore, crucial that the risk/return relationships are properly understood and managed by investors.

2.6.2 Financial Performance of the Superannuation Industry

APRA (2009b) recently released superannuation data which show that superannuation assets have grown from $518.1 billion in 2002 to $1,170.4 billion in 2008 representing an annual increase of 14.5 percent. There was a significant increase in assets held in all fund sectors (industry, public sector, retail, small funds) except for the corporate sector. The APRA report also reported investment performance for the period 1999-2008 for the various sector funds with over four members. The arithmetic mean Return on Assets (ROA) for all funds during this period was 5.2 percent. However, there was significant variation in returns over this period with the highest annual return of 13.3 percent for the year ended 30 June 1998, and the lowest a negative 7.8 percent in the year ended 30 June 2008. The lowest performing sector was retail with an average 10-year ROA of 4.1 percent and the best performing was the public sector with an average 10-year ROA of 6.3 percent, followed by the corporate sector (6.2 percent) and the industry sector (5.7). Statistics released by APRA (2009b) for the year ended 30 June 2008 show that the ROA for all superannuation funds with more than four members was negative 7.8 percent. Corporate funds had the lowest overall ROA with negative 5.3 percent, followed by the public sector funds with negative 5.7 percent, industry sector funds with negative 5.9 percent and retail funds with negative 10.3 percent.

2.6.3 Impact of the Global Financial Crisis

The impact of the global financial crisis on investment markets and on the recent performance of superannuation funds has been quite severe. Super Ratings (2009) data indicate that the latest benchmark annualised returns to 31 January 2009 for the

Australian shares index is negative 26.65 percent and for the high growth index it is negative 22.56 percent. Super Rating's data also indicate negative returns for the property index (-25.2) and the balanced index (-15.1). The OECD (2008b) reports that pension funds in the OECD had declined by about US $3.3 trillion from December 2007 to October 2008, representing nearly a 20 percent decrease over that period. This indicates that poor investment performance of superannuation funds is widespread, impacting investment values around the world. AIST (2008b, p. 6) report that "superannuation funds face an increasing probability of another negative year for investment options with higher exposure to growth assets". In February 2009, representatives of the Superannuation Stakeholder Group in Australia prepared a joint communiqué on superannuation in the context of the global financial crisis. They acknowledged the severe impact of the crisis on the Australian share market and remarked that this was not the first time the market had experienced a significant downturn. The Superannuation Stakeholder Group (2009, p. 4) emphasise that:

> Even though many superannuation funds have experienced poor returns over the last 12 months, over the last 5 years superannuation funds have delivered strong results. Superannuation continues to be a worthwhile investment over the long-term.

The immediate impact is on those who are retired and living off their investment income and those older workers (baby boomers) on the verge of retirement. Many retired persons have witnessed a dramatic fall in their income and investments. This has recently placed more demand on the aged pension as more retirees become eligible for payments as a result of either falling asset values or lower income (or both). Others looking to retire in the near future are contemplating delaying their retirement and continuing to work because of the losses they have recently incurred in their superannuation accounts. ABC News (2009) reports that research firm TNS has found that in Australia 44 percent of baby boomers are postponing their retirement because of the global financial crisis. The OECD (2008b, p. 2) has reported that "the impact of the financial crisis for people who belong to defined contribution funds depends on their investment choice and the member's age". Baby boomers with high exposure to equity investment are the most affected.

The financial crisis has highlighted the need for superannuation fund members to understand that negative returns occur and usually have a relatively short-term impact and that superannuation funds have a long-term investment goal and investment performance should be judged on this basis. The OECD (2008b, p. 2) emphasises that:

> …in the context of the financial crisis and the rapid growth of defined contribution plans, effective financial education programmes and information disclosure have become more important to the well-functioning of the private pension system.

As a result of negative sentiment there have been increasing levels of superannuation fund members switching from growth and balanced options to cash (AIST 2008b). The superannuation fund members who have chosen to make the switch to more conservative investment options are at risk of missing higher positive returns when the markets ultimately recover. A superannuation education framework is necessary to ensure that individuals become informed on investment matters relating to their superannuation. It is therefore important to assess the existing framework and the mechanisms by which superannuation fund members become informed on these matters.

2.7 Regulation of the Superannuation Industry

Superannuation funds are principally regulated under the Superannuation Industry (Supervision) (SIS) Act 1993. This Act comprises all the regulations that a complying superannuation fund must follow. It sets out the basic duties and responsibilities of trustees, the disclosure and regulatory reporting requirements and the roles performed by auditors and actuaries. APRA together with the Australian Securities and Investment Commission (ASIC) are charged with the primary responsibility for supervising the superannuation system through the administration of the SIS Act 1993. APRA, as prudential regulator, is responsible for supervising the banking, insurance and superannuation sectors of the financial services industry: ASIC is responsible for market integrity, disclosure and other consumer protection issues across the financial services industry. Only regulated superannuation funds are governed by the SIS Act. Superannuation funds must apply to become a regulated

fund, and in return for complying with the Act the funds receive certain tax concessions. The SIS Act was amended in 1999 to provide the ATO with powers to regulate Self-managed Superannuation Funds (SMSFs). SMSFs are a category of small superannuation fund which have fewer than five members. The ATO is also responsible for the taxation of superannuation funds.

The Superannuation Safety Amendment Act 2004 introduced major changes affecting APRA regulated superannuation funds including:

- trustees were required to be licensed by APRA by 30 June 2006 if they wished to remain as trustees of APRA-regulated superannuation entities;
- a mandatory risk management framework would apply for both the trustee and the funds under trusteeship; and,
- the introduction of new operating standards covering fitness and propriety, adequacy of resources and outsourcing (APRA, 2007, p. 8).

From 1 July 2004, trustees of Registrable Superannuation Entities (RSE) have been required to hold a Registrable Superannuation Entity Licence (RSE Licence) issued by APRA. Public offer entities had a transition period of two years from 1 July 2004 to 30 June 2006 within which to obtain an RSE licence and register their RSE. In addition, all RSE must be registered with APRA prior to commencing operations. Trustees must first be granted an RSE Licence before being able to register as an RSE. Trustees of self-managed superannuation funds are regulated by the ATO and public superannuation schemes are exempt. The SIS Act contains rules that impose minimum requirements on trustees and are deemed to form part of the trust deed of every regulated fund. The ATO (2007, p. 10) summarise the duties imposed by the SIS Act as follows:

- act honestly in all matters concerning the fund;
- exercise the same degree of care, skill and diligence as an ordinary prudent person in managing the fund;
- act in the best interest of all fund beneficiaries;
- keep the money and assets of the fund separate from other personal assets;

- retain control over the fund;
- develop and implement an investment strategy;
- not enter into contracts or behave in a way that hinders trustees from performing or exercising their functions or powers; and,
- allow members access to certain information.

If a trustee fails to comply with the SIS Act regulations then regulatory penalties and sanctions may be imposed. If a trustee is prosecuted and is found guilty of either a civil or criminal offence under the civil penalty provision, the maximum penalties that may apply under Part 21 of the SIS Act are $220,000 or five years imprisonment (or both).

Moreover, the Financial Services Reform Act 2001 (FSR Act) was designed to provide standardisation within the financial services industry. The FSR Act requires superannuation fund trustees to have an Australian Financial Services Licence (AFSL) if they are providing financial advice or are a trustee of a public offer superannuation fund. Those employed by the fund manager to assist in investment decision making are also required to hold an AFSL to perform their job. Superannuation fund compliance with the FSR Act is monitored by ASIC.

Furthermore, the Superannuation Complaints Tribunal (SCT) was established by the Commonwealth Government to deal with complaints about superannuation, annuity policies and Retirement Savings Accounts (RSA). The aim of the SCT is to provide an economical, quick and effective way to resolve certain complaints relating to superannuation. It is available to current and former fund members and their beneficiaries and the SCT levies no fees or charges to lodge a complaint. The legislation under which the SCT is established and operates is known as the Superannuation (Resolution of Complaints) Act 1993.

2.8 Taxation of Superannuation

The taxation applying to superannuation contributions, income and retirement benefits was simplified from the 1 July 2007 with the introduction of revised superannuation measures. 'Concessional contributions' are able to be made by an employer for the employee and are taxed at 15 percent when they go into the superannuation fund account. These concessional contributions include superannuation guarantee payments, other employer-based contributions on behalf of the employee including employee salary sacrifice contributions, or any other contributions for which a claim for an income tax deduction is made. Salary sacrifice is an arrangement between the employer and employee to pay a portion of the employee's before-tax salary into a superannuation account. A person is eligible to make superannuation contributions if they are under 65 years of age, or they are between 65 and 74 and can meet the work test of 40 hours work over 30 consecutive days during the financial year in which the contributions were made. Up to $50,000 of concessional contributions can be made to a superannuation account each year. The current transitional arrangements allow contributions up to $100,000 each year until 30 June 2012 if a person is aged 50 or over. Any person turning 50 during the transitional period can still make use of the $100,000 cap for any remaining years until 2012. Any contributions made over the concessional rate are subject to additional tax of 31.5 percent; and, a person can make up to $150,000 a year in non-concessional contributions. The assessable income of a complying superannuation fund's earnings is taxed at a rate of 15 percent, and taxation paid by superannuation funds can be further reduced by the use of imputation credits. In the 2009-10 federal budget it was announced that there will be a reduction in the concessional contributions cap from $50,000 to $25,000 for people aged under 50. Furthermore, during the transitional period to 30 June 2012 there will also be a reduction in the concessional contributions cap from $100,000 to $50,000 per annum for people aged 50 or over.

From 1 July 2007 superannuation benefits have generally contained only two components: a tax-free component – taxed in the superannuation fund; and a taxable component – untaxed in the superannuation fund. This implies that superannuation benefits will be paid tax-free if they are received from a taxed source and the person is aged 60 or over. Most superannuation fund members are most likely to draw their

benefits from an element that has been taxed in the fund (Nielson 2007). The Reasonable Benefits Limit (RBL) system that was used for limiting the amount of concessional taxation was abolished as part of the new simplification amendments.

The preservation age is the age at which a retired fund member can gain access to benefits that have accumulated in a superannuation fund or RSA. As of 1 July 1999 the preservation age was lifted from 55 to 60 years of age and phased-in over a period of time. The information appearing in Table 2.4 is used to assess an individual's preservation age.

Table 2.4 Preservation Ages by Date of Birth

Date of Birth	Preservation Age
Before 1 July 1960	55
1 July 1960 – 30 June 1961	56
1 July 1961 – 30 June 1962	57
1 July 1962 – 30 June 1963	58
1 July 1963 – 30 June 1964	59
After 30 June 1964	60

Source: Nielson (2008, p. 21).

However, if a superannuation benefit is accessed at preservation age, but before the age of 60, additional tax may need to be paid. The tax treatment of superannuation fund members for benefits that have been taxed in the fund is presented in Table 2.5.

Table 2.5 Tax Treatment of Superannuation Member Benefit – Taxed Element

Age When Benefit Received	**Superannuation Lump Sum**	**Superannuation Pension**
Aged 60 and above	Tax Free	Tax Free
Preservation age to 59	0% up to $145,000, 15% on amount above this figure	Marginal tax rate but with 15% tax offset
Below preservation age	20%	Marginal tax rate but no tax offset for most pensions[a]

[a] A disability superannuation pension received below preservation age receives a 15% tax offset

Source: Nielson (2008, p. 17).

It is noted that some pensions, such as those paid from the Commonwealth Public Sector Superannuation Scheme (PSS), may contain payments from both a taxed and untaxed source along with some tax free amounts (Nielson 2007). These pensions would qualify for both the relevant tax offsets described in Tables 2.5 and 2.6. The taxation treatment of the benefits that are untaxed in the fund is summarised in Table 2.7.

Table 2.6 Tax Treatment of Superannuation Member Benefit – Untaxed Element

Age When Benefit Received	Superannuation Lump Sum	Superannuation Pension
Aged 60 and above	15% on first $1m per superannuation plan. Top marginal rate on amounts over this	Marginal tax rates and 10 percent of gross pension paid tax offset
Preservation age to 59	15% on first $145,000, 30% on amounts between this figure and $1.045m and top marginal rate on amounts above $1.045m	Marginal tax rates but no tax offset
Below preservation age	30% on amounts up to $1.045m, top marginal rate thereafter	Marginal tax rate but no tax offset

Source: Nielson (2008, p. 17).

The new rules no longer require a person to cash in their superannuation benefits once they reach 65 years of age and are no longer working. The opportunity now exists for a person to maintain their investment in the superannuation system for as long as they like. In the event of death, if the superannuation trustee pays a death benefit as a lump sum to a dependent it will usually be tax free. A dependent can be a spouse, children under the age of 18, or any person who was either financially dependent on the deceased, or had an inter-dependent relationship immediately prior to the person becoming deceased. If the deceased person is over 60 years of age, or if the dependent is over 60 years of age, the payment of a pension to a dependent will be tax free. If the benefit is paid as a lump sum to a non-dependent, on any taxed component – the taxed element will be taxed at 15 percent (plus 1.5 percent medicare levy), and on any taxed

component – the untaxed element will be taxed at 30 percent (plus 1.5 percent medicare levy). From 1 July 2007, superannuation fund trustees have generally not been able to pay a death benefit pension to a person who is not a dependent.

Access to preserved superannuation benefits can occur before a person reaches the preservation age on compassionate grounds, severe financial hardship and as a result of permanent incapacity. From 1 July 2007 a person who has reached preservation age may access their superannuation benefits in the form of an income stream. The income stream received does not have to be repaid into the superannuation fund account. From 1 July 2002, temporary residents who permanently depart Australia have been able to gain access to their superannuation. However, any taxable component attracts 30 percent withholding tax and 40 percent withholding tax is payable on any untaxed component.

In May 2008 the Australian Government announced the Review of Australia's Future Tax System (Henry Review) and in August 2008 The Treasury (2008b) released a discussion paper entitled 'Architecture of Australia's Tax and Transfer System', which was followed by a call for public submissions. As part of its terms of reference the review panel has been asked to consider enhancing the taxation of savings, assets and investments. The full review of the Australian taxation system is due at the end of 2009. ASFA's (2009b) submission to the Henry Review (responding in regards to superannuation taxation), recommends maintaining investment returns in retirement tax free, and that the age at which superannuation becomes tax free be gradually raised to 65. ASFA also made recommendations for improving equity of superannuation tax for low and middle income earners, and suggested simplifying capital gains tax rules on the sale of business to encourage the transfer of lump sums to superannuation. Concurrent with the 2009-10 federal budget, the government launched a report on the retirement system prepared as part of the review of Australia's Future Tax System. The main recommendation of the report was the retention of the current system. The panel also found that the current superannuation guarantee contribution rate is adequate and recommended that it to be maintained at its current level of nine percent. It further recommended that the age at which Australians can access their superannuation (the preservation age) should be gradually

increased to 67 years. The panel has deferred final recommendations on related issues until the release of its full report in December 2009.

2.9 Adequacy of Superannuation Savings

An adequate superannuation-based retirement income for Australians was the objective of introducing a compulsory superannuation contributions scheme. Nielson (2006) suggests that the ability of the current retirement income system to produce an adequate retirement income is in doubt. Clare (2008a, p. 4) states:

> …current average balances are below those which the Commonwealth Treasury projected at the time compulsory superannuation was introduced. The data also indicate that there are a number of groups with relatively low levels of superannuation who need further assistance and encouragement to save if they are to achieve even a modest standard of living in retirement.

We can expect a continual growth in superannuation balances for many more years as the private retirement income system matures. It is noted that the Australian compulsory superannuation system is still relatively immature and that many individuals have only had superannuation coverage since the introduction of the Superannuation Guarantee in 1992 (Clare 2008a). The Superannuation Guarantee only reached its maximum rate of nine percent in 2002 and as a result many still have modest balances in their superannuation accounts. Clare (2008a, p. 7) suggests that:

> With average retirement payouts in 2005-06 of the order of $136,000 for men and only $63,000 for women it is clear that most retirees will need to substantially rely on the Age Pension in their retirement.

Nielson (2006) acknowledges that small retirement payouts from superannuation are a result of an immature superannuation system that will not reach its full potential until 2037 at best. In the year 2037 retirees will have accumulated superannuation contributions at a rate of nine percent per annum for a 35-year period. The groups identified as having the greatest risk of insufficient superannuation savings for

retirement are women, older baby boomers, low income workers, the long-term unemployed, and long-term part-time workers (Nielson 2006). Retirement saving under the compulsory superannuation system in Australia is dependent on an individual employee's years of employment and wage level. Women are generally at a disadvantage under this system where continuous employment is often interrupted by the commitments of having a family. Olsberg (2004, p. 164) reiterates this concern and states that:

> The fundamental problem is not having enough time or money in the paid workforce. Women's working patterns, their life long earnings and therefore, their capacity to accumulate sufficient retirement savings, are crucially compromised by interruptions to paid employment due to childbearing, child rearing and other family responsibilities.

Baby boomers are usually defined as those born between 1946 and 1961 and who are now aged between 48 and 63 (Hamilton & Hamilton 2006). The baby boomer generation was 30-45 years old when the Superannuation Guarantee Charge was introduced in 1992. The Superannuation Guarantee places this group in a position in which they are unable to capture the full benefit of superannuation over their working lives. Preston and Jefferson (2002) suggest that most female baby boomers will not be in a position to fund their own retirement and will remain highly dependent on the aged pension. Hamilton and Hamilton (2006) identified lower income baby boomers as most at risk of having insufficient savings to fund retirement adequately. Their research suggests that many high income baby boomers have significant wealth in superannuation and in other assets and could retire early.

Low income workers, the long-term unemployed and part-time workers are also at a disadvantage under the Australian Superannuation Guarantee. Low income leads to lower employee superannuation contributions. No contributions are made during periods of unemployment, and if these periods are prolonged superannuation will not sufficiently accumulate to fund retirement. Similarly, part-time workers and casual workers will derive relatively less employee superannuation contributions when compared to those employed full-time. It is stated by Nielson (2006, p. 26) that "for

these groups the age pension will always be a major component of their retirement income".

2.9.1 Measuring Adequacy

In order to determine whether or not superannuation and other savings can adequately fund a person's retirement we must first develop a measure. Nielson (2006, p. 6) provides the two following methods for defining an adequate retirement income:

- using a replacement rate, that is, the post-retirement income expressed as a percentage of an individual's pre-retirement income; or,
- using a budgetary standard, that is, measuring the adequacy of an individual's post-retirement income against what it may cost to live in particular locations.

Rothman and Bingham (2004) describe the replacement rate as a ratio of a person's income or spending power after retirement compared to the period just prior to retirement. This figure is usually expressed as a percentage of the retiree's pre-retirement income (Nielson 2006). The Senate Select Committee (2002) on Superannuation noted general agreement among superannuation industry representatives that retirement income between 60 and 65 percent of pre-retirement gross income was adequate. Stanford (2004) suggests that a replacement rate of 65 percent may give retirees who own their home a higher standard of living in retirement than they experienced for the majority of their working lives. (Nielson 2006, p. 29) suggests that:

> Reasons why a family may not have access to 65 percent of its gross salary available for consumption include mortgage repayments, costs of raising children or rental costs. With the exception of the last cost, these burdens are generally not part of a retiree's expenditure in retirement.

An example of the budgeting approach to measuring the adequacy of retirement income has been developed by Westpac Banking Corporation and the Association of

Superannuation Funds of Australia (The Westpac-ASFA Retirement Standard). They outline two standards of retirement income as follows (ASFA, 2007, p. 1):

- modest lifestyle in retirement (better than aged-pension, but still only able to afford fairly basic activities); and,
- a comfortable retirement lifestyle (enabling an older, healthy retiree to have a broad range of leisure activities and a good standard of living).

National figures released from ASFA (2008) for the December 2008 quarter on the Westpac-ASFA retirement standard show that a couple living comfortably in retirement needs to spend $50,561, while those couples seeking a modest but adequate retirement need to spend $27,454 a year. Both these standards of living assume the retirees own their home. Therefore, the aged pension would allow a retired couple a modest but adequate standard of living. Rothman and Bingham (2004) found that the current rate of SG contributions, combined with a sufficiently long period in the workforce (more than 35 years), could produce sufficient balances for those on or below Average Weekly Ordinary Time Earnings (AWOTE) to provide a replacement income of between 60 and 78 percent of average salary over the last year of employment.

2.9.2 Recent Data on Retirement and Superannuation

The income generated from superannuation and voluntary savings will vary from person to person and will depend on savings either through a superannuation account or other non-superannuation investment assets. As previously discussed in Section 2.3, Australia, through compulsory superannuation, has made significant changes to prepare for the retirement of its ageing population. A recent Australian Bureau of Statistics Survey (ABS 2008) on Employment Arrangements, Retirement and Superannuation (SEARS) indicates that 91 percent of employed people had superannuation coverage. Given widespread superannuation coverage within the Australian population, it is important that people are adequately educated on superannuation matters. The survey also found that people who have retired more

recently are less likely to have government aged pensions and allowances as their main source of personal income. The survey attributes this fall in demand for the aged pension to the increase in other income sources such as superannuation, annuities or income-streams. Importantly, of all people aged 45 years and over who intend to retire from the labour force, 43 percent reported that their expected main source of income at retirement would be income from superannuation, an annuity, or an allocated pension. However, present figures from SEARS indicate that only 21 percent of people aged 65 and over rely principally on superannuation or investment income. A comparison to the previous SEARS survey conducted in 2000 shows that people with superannuation balances over $100,000 increased from six percent to 15 percent, and people with balances of less than $10,000 decreased from 48 percent to 29 percent (ABS 2008). It is also important to note that in 2007 the mean balance for males was $72,200 and $47,200 for females with accumulation accounts: for defined benefit account holders, the mean balance for males and females was $120,700 and $80,200, respectively. CEDA (2004) reports that many Australians will find that the level of their savings will be inadequate in retirement. Some implications of inadequate superannuation balances for retirement funding are addressed in the next section.

2.9.3 Implications of Inadequate Retirement Savings

For financial reasons many of the baby boomer generation believe they will have to continue to work up to and beyond the retirement age (Hamilton & Hamilton 2006). Recent data from the SEARS survey indicate that 64 percent of all employed people intend to retire between the age of 60 and 69, whereas 24 percent intend to retire aged 70 years or over (ABS 2008). These statistics indicate that there is still a substantial number in the population who intend to work to retirement age and beyond. Other policies that have been advocated by superannuation and industry commentators to support superannuation savings further in Australia are summarised by Nielson (2006, p. 7) as follows:

- increasing the superannuation guarantee rate from nine to between 12 and 15 percent of wages;

- reducing the tax rate on superannuation fund income (currently 15 percent on superannuation fund tax-deductible contributions and overall fund earnings);
- requiring additional after-tax contributions to be made by employees; and
- requiring that some or all of a person's superannuation benefits be converted to a pension.

2.10 Retirement Plans in the United States

A substantial level of retirement plan research has been conducted in the US. Several aspects of the US research are reviewed in-depth in Chapter Three. It is therefore important to provide a brief summary of some aspects of the US retirement system that will form part of the discussions in the next chapter.

The US has a three-tiered system supporting retirement income. It has a contributory social security system where contributions are made by employer and employee. The pension received depends on the period of participation, retirement age, and career average earnings (Schubert 2008). The other tiers include a voluntary employer-financed pension or defined contribution scheme and tax advantaged voluntary savings. In 2007 the US had total accumulated assets in the private pension system of US $17 trillion (OECD 2008b). Similar to Australia the US has two basic types of retirement plans, defined benefit and defined contribution plans. Porterba, Venti and Wise (2007) indicate that there has been a shift in savings patterns in the US away from employer-managed defined benefit pensions to defined contribution retirement savings plans largely controlled by employees. However, unlike in Australia, employer contribution to defined contributions plans is not compulsory in the US. The defined contribution system is regarded as complex with a substantial number of available plans (Schubert 2008). The 401(k) plan is an employer-sponsored retirement fund where the employer is responsible for the creation and design of the plan: it is a defined contribution plan where employees sacrifice a percentage of their salary to contribute to the plan. These plans were developed under section 401(k) of the US Internal Revenue Code which allows employees to make before-tax contributions from their salaries. This feature can be incorporated into most types of defined

contribution plans. For the purposes of this explanation the 401(k) plan will be differentiated from other defined contribution plans. Mehra and Mishra (2007) explain that 401(k) plans have become the choice of retirement vehicle over traditional defined benefit plans. According to the Investment Company Institute (2006), at the end of 2005, 401(k) plans contained approximately 47 million plan participants with an accumulated holding of US $2.1 trillion in plan assets. This represents more assets in 401(k) plans than in other defined contribution or defined benefit plans (Mehra & Mishra 2007). A summary of sources of funding 401(k) and all other plans is contained in Table 2.7.

Table 2.7 Sources of Funding for 401(k) and all Other Plans

Sources Of Funding	401(k) Plans	All Plans except 401(k)
Employee Contributions	The right to make employee contributions is a condition of plan membership	Plans are usually non-contributory
Employer Contributions	Employer (matching) contributions usually depend on the employee contribution. The proportion of the employee contribution matched by the employer depends on plan rules	Employers are expected to contribute
For all plans, including 401(k) plans, there are maximum limits in employer contributions.		

Source: OECD (2008b, p. 98).

The introduction of the Pension Protect Act (PPA) of 2006 encourages automatic enrolment in 401(k) plans. Under the PPA, an employer can automatically enrol employees in a 401(k) plan and set minimum contribution rates without the employee's approval: employees can opt out of the plan or elect to make changes. In addition to automatic enrolment, an automatic escalation feature may also feature in a 401(k) plan allowing automatic increases in the contribution rate. VanDerhei (2007) suggests increased accumulations will result from automatic escalation for low income workers. Schubert (2008) makes the following comparisons of the US and Australian retirement fund systems:

- Australia has near universal coverage whereas the US has voluntary participation supplemented by auto-enrolment;
- Australia has a nine percent minimum contribution rate plus voluntary incentives (co-contribution), whereas the US has voluntary contributions supplemented by auto-escalation plus employer matching; and,
- Australia has balanced target risk investment defaults plus a practical investment option menu range, whereas the US has a wide ranging investment menu with new target maturity defaults (target maturity funds target the year of retirement and the asset allocations change over the years towards conservative as retirement nears).

Schubert (2008) also explains that Australia's defined contribution system is funded, market-based, and nearly universal and suggests that it is widely acknowledged as a model for other countries.

2.11 Summary

An overview of the Australian superannuation framework was provided in this chapter. Australia's three-pillar approach to retirement income was noted to have World Bank endorsement. The three pillars are composed of an aged pension, compulsory superannuation and voluntary savings. The Australian aged pension is funded by government revenue and provided to around 75 percent of Australians who have satisfied eligibility criteria. The pension level was considered to be well below the amount required to achieve an adequate lifestyle, and in close proximity to the poverty line.

The implications of an ageing population on Australia's retirement system were discussed. The superannuation system was identified by the Intergenerational Report (The Treasury 2007) as of importance in combating the economic impact of an ageing population on government finances. The main features of Australia's compulsory superannuation system were described. The government's co-contribution scheme was also discussed. Further discussion occurred on the implications of allowing

superannuation fund members a choice of fund. Survey data indicated that only a small percentage of superannuation fund members exercised their choice to move to another fund. However, it was acknowledged that the choice of fund legislation could have several beneficial effects.

The problems associated with lost superannuation accounts were highlighted and the mechanisms available to individuals to search for lost superannuation were discussed. There was further analysis of the composition and size of Australia's superannuation industry. Furthermore, defined benefits funds were contrasted against defined contribution funds: the move towards defined contribution funds was also noted.

There was a review of the performance of the superannuation industry with particular focus on the recent global financial crisis. It was emphasised that superannuation fund members required more education on superannuation matters; that is, there needs to be an appreciation of the long-term nature of superannuation investment and the short-term risks that impact the performance of funds.

The regulatory framework was described with particular attention given to the SIS Act and the role of APRA. The importance of other regulatory authorities such as ASIC and the ATO was also noted. The impact of regulation on superannuation trustees was discussed including the penalties they face for any criminal or civil offences under the SIS Act. There was also a summary provided of the taxation of superannuation funds noting that both superannuation contributions and income are taxed at concessional rates.

The discussion on the adequacy of superannuation savings suggested that there were several groups in the Australian community that do not have sufficient coverage in superannuation to fund their retirement adequately. These groups were identified as the low income baby boomers, women, and low income earners. A review of the literature was undertaken to determine how to measure adequacy. It was found that adequacy could be measured on several levels, that is, a modest-yet-adequate standard of living in retirement, or a comfortable-affluent standard of living in retirement. Year 2007 (ABS 2007) data from SEARS indicated that a great majority of Australian

workers had superannuation coverage. However, many workers still have superannuation balances that could not sustain them in retirement.

A brief discussion of the US retirement system was provided in the last section. It was shown that the US is moving away from defined benefit plans towards defined contribution plans. 401(k) plans were explained: these are voluntary defined contribution plans sponsored by employers and have become the most prominent retirement savings plans in the US. A brief comparison of the US and Australian defined contribution plan structures, was also provided.

Chapter Three

Literature Review

3.1 Introduction

The purpose of the literature review is to develop a theoretical framework to analyse the impact of financial education in a choice of fund superannuation system. The behavioural finance models and their implications for retirement saving will be explored. Bernstein (1996) states that the behavioural research evidence suggests irrationality, inconsistency, and incompetence in the way people approach and arrive at decisions and choices when faced with uncertainty. Financial education is recognised as a potentially important avenue to improve the quality of financial decision making (Duflo & Saez 2003). Therefore, the role financial education plays in changing the behaviour of individuals towards retirement saving will be highlighted and research questions will be developed.

3.2 The Life-Cycle Model

The life-cycle model (Modigliani & Brumberg 1954) assumes a "planned consumption path" that reflects the allocation of life resources to consumption over an individual's life span. This model assumes that individuals will rationally plan their consumption and savings needs over their lifetimes whilst taking into account the interests of their heirs. According to the principles of the life-cycle model, individuals will accumulate sufficient assets that will allow them to maintain their standard of living in retirement. Mitchell and Utkus (2006, p. 83) argue that:

> …on balance, the life-cycle theory is thought to do a reasonable job in explaining patterns of household saving behaviour. Saving generally rises with income and age, and is positively associated with education and total wealth. Young households generally have more debt than assets, while prime-aged households do appear to

> begin saving more and accumulating financial holdings. Finally, in retirement, people do tend to consume portions of their financial assets as they age.

Aizcorbe, Kennickell and Moore (2003) provide evidence that supports the life-cycle hypothesis, and from their analysis of 1998 and 2001 surveys of consumer finances they found that (p. 6):

> By age group, median and mean net worth show a "hump" pattern that generally peaks in the 55-64 age group. This pattern reflects both life-cycle saving behaviour and the lower expected total lifetime earnings of progressively older age groups.

The theory presumes that workers in their youth tend to be dis-savers, using borrowed funds to support current consumption; in their middle-aged years individuals become net savers and accumulate wealth through the purchase of assets to finance future consumption requirements in retirement; and in retirement, portions of these assets will then be used to meet consumption patterns (Mitchell & Utkus 2006).

However, a report compiled by the Organisation of Economic Co-operation and Development (OECD 2005) "Improving Financial Literacy", emphasises that individuals generally lack an awareness of the importance of saving for retirement and that a number of surveys conducted in different OECD countries identifies discrepancies between assumed life-cycle theory and actual retirement saving behaviour by individuals. Helman, Greenwald, VanDerhei and Copeland (2008) report on the Employee Benefit Research Institute (EBRI) retirement confidence survey 2008 conducted in the United States (US) which found that only 18 percent of workers were very confident about having enough money to retire comfortably and that 53 percent of workers or their spouses had not attempted to calculate how much money they required for a comfortable retirement. Other evidence from this survey indicated that savings levels amongst US workers were modest and that most workers under-estimated their retirement needs.

In Australia, the ANZ A.C.Nielsen (2005) survey of 3,500 adults found that only 34 percent of respondents under 65 years of age with superannuation expected to live about as comfortably in retirement as they are currently living. A survey of Australian

workers by ANOP Research Services (2006) identified that only 35 percent of workers surveyed believed that their current savings would adequately fund their retirement. They also found that the mean age planned for retirement had increased from 59 years in 2001 to 61 years in 2006. They concluded that the identification of inadequate retirement savings by Australians has lead to the expectation of later retirement (ANOP Research Services 2006). The AXA Retirement Scope Survey (AXA 2008) also shows that 49 percent of Australians are not prepared for their retirement. These surveys provide tangible evidence that individual retirement saving behaviour does not meet the expectations of the life-cycle model.

From the available evidence, it appears that both internationally and domestically a significant number of individuals may not be adequately planning and saving for retirement. Individual behaviour does not appear to accord with what is predicted by the life-cycle model, and survey literature does not support what is theorised by the life-cycle model as significant individual behaviour deviates from what is prescribed by this model.

3.3 Behavioural Implications

Kahneman and Tversky (1979) used cognitive psychological techniques to explain a number of documented anomalies in rational economic decision making. These anomalies are researched in the field of behavioural finance. Loveridge (2008, p. 222) describes behavioural economics as "the most recent addition to the fragmenting field of economics". Behavioural finance combines the two disciplines of psychology and economics to explain why and how people make what seem to be irrational decisions when they spend, invest, save and borrow money (Belsky & Gilovich 2000). Even though some individuals have the cognitive skills to solve the retirement saving problem, they are influenced by other behavioural factors that will limit their ability to meet their retirement saving plan. Venti (2004) describes the impact of psychological and behavioural influences as fundamentally irrelevant when it comes to the financial decision of saving. However, Venti (2004, p. 3) does acknowledge their relevance in the behavioural savings model by suggesting that:

> …their importance in actual saving decisions suggest that policies designed with psychological and behavioural factors in mind may help individuals who find it difficult to save.

Modigliani and Brumberg's (1954) life-cycle theory of saving has received widespread criticism for its economic theorising and simplifying assumptions made in order to model saving and consumption behaviour throughout an individual's lifetime (Shefrin & Thaler 1988). Thaler (1994, p. 186) proposes that:

> If households are acting in accordance with the life cycle theory of saving, then under-saving is impossible, so why do they need to have their psychology redressed? And how does this psychology fit into the model?

Shefrin (2002) suggests that any successful retirement plan should recognise the need to accomplish a series of key tasks. Shefrin (2002, p. 139) describes these tasks as follows.

1. Identify financial needs during retirement.
2. Save an appropriate amount over time.
3. Select a portfolio of assets with a risk-return profile that is appropriate for reaching the retirement goal.
4. Have procedures in place to prevent those assets from being consumed too early.

These tasks assume that households can solve "multi-period dynamic maximisation problems" (Thaler 1994). Behavioural finance presents three important ways in which humans deviate from the standard economic model (Mullainathan & Thaler 2000).

1. Bounded rationality which reflects the limited cognitive abilities that constrain human problem solving.
2. Bounded willpower that captures the fact that people sometimes make choices that are not in their long-run interest.
3. Bounded self-interest incorporates the comforting fact that humans are often willing to sacrifice their own interests to help others.

The behavioural influences of bounded rationality and bounded willpower will often inhibit an individual's capacity to be able to plan an optimal strategy to save for retirement and then to execute the plan. The various behavioural factors that influence the saving intentions and patterns of individual saving for retirement are now discussed and their influence on financially educating individuals is evaluated.

3.3.1 Bounded Rationality

Shefrin (2002) identifies some main themes in behavioural finance and economics that suggest people will not make decisions strictly on rational analyses (bounded rationality and cognitive biases) and the way a problem or decision is presented to the decision-maker will affect their action (decision framing). Mullainathan and Thaler (2000, p. 9) suggest that:

> …this standard life-cycle model of savings abstracts from both bounded rationality and bounded willpower, yet saving for retirement is both a difficult cognitive problem and a difficult self-control problem.

Mullainathan and Thaler (2000, p. 1) explain that "bounded rationality reflects the limited cognitive abilities that constrain human problem solving". While bounded willpower, otherwise termed bounded self-control, refers to the concept that while individuals may possess the appropriate intentions, they may lack the control or willpower to instigate the changes required in their behaviour. Mitchell and Utkus (2003) suggest that superficially the retirement saving problem is possibly an ideal illustration of Simon's (1957) concept of bounded rationality. Simon (1957) (in Tiessen & Waterhouse 1983, p. 258) defined bounded rationality in the following way:

> The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behaviour in the real world.

Furthermore, Mitchell and Utkus (2003, p. 3) argue that:

> …being good at retirement saving requires accurate estimates of uncertain future processes including lifetime earnings, asset returns, tax rates, family and health status, and longevity. In order to solve this problem, the human brain as a calculating machine would need to have the capacity to solve much decades-long time value of money problems, with massive uncertainties as to stochastic cash flows and their timing.

Mullainathan and Thaler (2000, p. 1) concur that, "since saving for retirement requires both complex calculations and willpower, behavioural factors are essential elements of any complete descriptive theory"**.**

3.3.1.1 Implication of Financial Literacy for Retirement Saving

A lack of financial literacy is said to have important consequences when it comes to planning and saving for retirement (Lusardi & Mitchell 2006). Fox, Bartholomae and Lee (2005, p. 195) state that "financial literacy denotes one's understanding and knowledge of financial concepts and is crucial to effective consumer financial decision making"**.** Hilgert, Hogart and Beverly (2003) demonstrated a strong link between financial knowledge and financial behaviour. Hogarth and Hilgert (2002) identified married couples, non-minority groups, the middle-aged, the more highly educated, and those on higher incomes as more financially knowledgeable. Lusardi and Mitchell (2006) identified older Americans as more financially illiterate and women, minorities (disadvantaged), and those without a college degree were at risk of displaying low financial knowledge. They also found that financial knowledge and planning are inter-related. They suggest that individuals with more financial knowledge are more likely to plan and those who do plan are more likely to rely on formal planning processes.

The 2008 ANZ survey of adult financial literacy in Australia (ANZ 2008) found that Australian adults are generally financially literate. However, it was found that certain groups face particular challenges when it comes to money management and financial

products. These groups were identified as: the young (18-24 years); females; people with a low level of education (year 10 and below); and those living in highest socio-economic disadvantaged areas. Literacy scores were significantly higher for people aged between 35-39 years, males, people with a university degree, people living in the least socio-economic disadvantaged areas, upper white collar workers, and those with annual household incomes of at least $150,000 per annum. When it came to superannuation matters the ANZ survey (ANZ 2008) reported that a significant proportion of people failed to read their superannuation statements and that people had a low level of awareness of some advantages and risks of superannuation. Thirty-one percent of those who read their annual superannuation statements found them difficult to understand. The survey found that 25 percent of superannuation fund members suggested that they did not receive or did not read their superannuation statements.

An earlier literacy study of working Australians conducted by Mercer (2006) found that Australians knew little about their own superannuation funds. It was also found that 40 percent of working Australians did not know if their funds are largely invested either in aggressive or conservative strategies. Mercer (2006) identified that working Australians admit to having a poor knowledge of retirement issues, and when given a short quiz on superannuation and retirement issues nearly two in three answered only half (or less) of all questions correctly. Worthington (2008) suggests that Australians' knowledge of superannuation is good in some areas and poor in others. He identifies a poor level of knowledge when it comes to reading and understanding superannuation statements, retirement planning, and knowledge of employer contributions. Worthington (2008, p. 367) warns that "the lack of retirement planning is more problematic, and could potentially cause the most severe adverse outcomes for fund members".

Beal and Delpachitra (2004), through a mailed survey, also found low knowledge of superannuation matters by Australians. The survey required respondents to answer a number of questions relating to superannuation. In line with a Commonwealth Brief Guide, they considered the technical questions as 'not difficult' and assessed basic knowledge to determine the very well informed. The survey was not administered randomly, but to a target population in two suburbs of Brisbane (Australia). The

chosen suburbs had a relatively higher educated and income socio-demographic group. Beal and Delpachitra (2004) thought that if this group exhibited low level knowledge then the results could be generalised to the population. Only 21.7 percent of respondents achieved an overall pass mark (50 percent) when answering the questions. However, 36.1 percent indicated that they were at least 'quite well informed' on superannuation matters. The authors put this down to over-confidence about self-knowledge. The authors recommended that the government spend more money on educating the community on superannuation.

Evidence from the US indicates that households with greater financial sophistication are more likely to invest in risky asset markets which tend to produce higher long-term investment growth, and to invest more efficiently (Calvert, Campbell & Sodini 2007). Furthermore, Lusardi and Mitchell (2007a) using Rand American Life Panel (ALP) data established that those individuals displaying greater financial literacy were more likely to plan for retirement. They also found that older, better educated, and male respondents are more likely to be planners, as they exhibit higher levels of financial knowledge. Lusardi and Mitchell (2008) used two sets of data (2004 and 1992) from the United States Health and Retirement Study and found that those respondents who reported that they planned for retirement accumulated higher levels of wealth. They identified a strong correlation between planning and financial literacy and a strong association between planning and wealth. They also found that low educated, low income and Black and Hispanic households were at risk of not preparing adequately for their retirement. Therefore, the issue that a number of individuals will lack the required knowledge to structure their retirement plan adequately cannot be ignored. Behavioural finance theory describes several other individual behavioural constraints that will also limit an individual's capacity to save for retirement. A discussion of these issues follows.

3.3.2 Bounded Self-Control in Retirement Saving

Even though some individuals have the cognitive abilities to solve retirement saving problems they may lack the self-discipline required to follow through to achieve their plan. Thaler and Shefrin (1981) describe this as 'bounded self-control' where

individuals try to save for retirement, but lack the willpower to execute their intentions. Mitchell and Utkus (2003) describe saving for retirement as analogous to other behaviour modification programs such as regular exercise and giving up smoking. A lack of self-control will inhibit the life-cycle theory by preventing households saving in the manner prescribed by the theory (Thaler 1994). Thaler (1994, p. 187) also argues that:

> Self-control problems can also distort behaviour away from that predicted by the life-cycle model because some situations are more conducive to saving than others, holding wealth, age and other relevant life-cycle parameters constant.

It is argued that most individuals are more tempted to satisfy current consumption than save for future retirement needs (Shefrin 2002). Hyperbolic discounting is a behavioural economic term used to refer to the preference people have to accept smaller payoffs sooner rather than larger payoffs later (Liabson 1997). Liabson, Repetto and Tobacman (1998) identified that individuals' near-term discount rates are much higher than their long-term discount rates. In time-value-of-money calculations, the discount rate is assumed to be constant. Therefore, a dollar saved today would be assumed to be worth exponentially more in the future. As hyperbolic discounters, individuals apply higher discount rates to the near term and lower discount rates to the future. The implications for an individual saving for retirement is that they will be much more inclined to spend money now rather than to have a larger amount for consumption in retirement. Mitchell and Utkus (2006, p. 84) suggest that:

> Put simply, workers who are hyperbolic discounters place a lower value on future benefits and overvalue the present. The application to retirement is clear: they over consume today because of self-control problems when it comes to saving for retirement.

Thaler and Benartzi (2004) suggest that once enrolled in a 401(k) plan individuals are reluctant to increase their retirement savings if it means less take-home pay. Their research on individual behaviour was used to design a programme (Save More Tomorrow) that gave workers the option to save more now to increase total savings later. The plan participants had to indicate that they wished to increase their savings

rate at regular pre-determined scheduled periods. Where the program was adopted, and used in conjunction with an investment consultant providing advice, the participating workers tripled their savings rates over a two-year period. The success of this program stems from the recognition that individuals lack the self-control to ensure that they take measures to ensure adequate retirement saving. In response to the outcomes produced by the Save More Tomorrow program Mitchell and Utkus (2003, p. 11) further confirm that "…it recognizes that individuals have self-control problems and benefit from a pre-commitment device when it comes to retirement savings".

3.3.3 Inertia and Procrastination in Saving Choices

United States (US) evidence on automatic enrolment in a 401(k) plan has revealed an anomaly about individuals and their saving behaviour relating to inertia and procrastination in decision making. Mitchell and Utkus (2006, p. 85) claim that:

> In the case of automatic enrolment, the benefit of higher plan participation rates appeared to be offset by a profound level of inertia. Most participants remained at the default savings and conservative investment choices set for them by their employer. Once enrolled, participants made few active changes to the contribution rates or investment mixes selected for them by their employer; instead they simply stayed with their initial assignment.

Madrian and Shea (2001a) evaluated the saving behaviour of employees of a large, publicly traded Fortune 500 company operating in the US health care and insurance industry. Their two key findings established that employee participation in the company's 401(k) plan was significantly greater under the automatic enrolment scheme and that a significant number of employees participating in this scheme retain both the default contribution rate and fund allocation. These findings contrast with the behaviour of those employees who were hired prior to automatic enrolment. Few of the latter group of employees voluntarily chose the default options. From their results Madrian and Shea (2001a, p. 1149), conclude that "This 'default' behaviour appears

to result from participant inertia and from employee perceptions of the default as investment advice".

Choi, Liabson, Madrian and Metrick (2002) studied the impact of automatic enrolment in US 401(k) voluntary pension plans and provide further evidence that employees will overwhelmingly accept automatic saving and fund enrolment defaults. They suggest that employee asset allocation decisions are driven by the menu of investment funds and they will often take the 'path of least resistance'. That is, it is easier to accept that default option rather than have to assess carefully the numerous options available to them. Choi et al. (2002, p. 104) argue that:

> Sophisticated employers should choose their plan defaults carefully, since these defaults will strongly influence the retirement preparation of their employees.

Choi et al. (2002) further found that nearly all employees surveyed, who intended to make changes to their pension plans as a result of an educational programme, failed to commit to their intentions. They suggest that employees will often do what is easiest, which may be nothing.

Gallery and Gallery (2005, p. 526) point to evidence of inertia and procrastination in Australia and suggest "that many Australians have failed to take control of their savings plans". A financial literacy and retirement readiness study (Mercer 2006) shows about half of working Australians have given some thought to retirement, but made little, if any, preparations for it. Australian workers are given options to make choice of fund and investment choice within the fund. Those workers who fail to exercise any choice are automatically placed into a default investment option by their employer. This may result in the selection of a poor performing default option. Gallery and Gallery (2005, pp. 529-530) suggest that:

> While choice offers the ability to select efficient long-term investment portfolios that maximise retirement benefits, poor financial literacy, inadequate disclosure and behavioural problems present significant policy challenges.

The Australian investment choice literature indicates a reluctance of superannuation fund investors to exercise their choice to change funds. Fry, Heaney and McKeown

(2007) utilised data from a FinaMetrica Survey and found that few participants in the survey indicated that they were likely to change their superannuation fund. A McNair Ingenuity Research (2008) survey also found that from 750 respondents only eight percent indicated that they had chosen to switch funds in the last 12 months.

Clark-Murphy and Gerrans (2001) reported on the choice that was offered to members of the Australian Superannuation Scheme for Australian Universities (SSAU). The members of the fund where given a one-off choice between remaining with the existing defined benefit plan or moving to a defined contribution plan which provided for a selection among four investment options. Only 33.3 percent of members chose to move to the defined contribution plan. From the others, 31.6 percent remained in the defined benefits by default (no action was taken) and 35.1 percent completed the form electing to remain in their existing fund.

3.3.4 Portfolio Theory

The return and risk on an investment are said to be basic concepts in finance (Peirson, Brown, Easton, Howard & Pinder 2006). The objective of an investor is to maximise expected returns. Historical returns are commonly used to make estimates of future returns (Jones, Shamsuddin & Naumann 2007). In investment theory, returns are assessed against risk. Investment risk is the chance that the actual investment outcome will differ from what was expected. Higher variation in possible expected investment outcomes means greater uncertainty and therefore more risk. The goal in investment is to maximise return whilst simultaneously minimising risk. This outcome is achieved through investment diversification. That is, the inclusion of several different investment assets in a portfolio is advantageous for investors as it enables a reduction in investment risk (Frino, Chen, Hill, Comerton-Forde & Kelly 2006). Traditional portfolio management is defined by Gitman, Joehnk, Juchau, Wheldon and Wright (2004, p. 160) as:

> …an approach to portfolio management that emphasises 'balancing' the portfolio by assembling a wide variety of shares and/or bonds of companies from a broad range of industries.

Markowitz (1952) first developed the theories which formed the basis of Modern Portfolio Theory (MPT). This theory utilises statistical measures to develop a portfolio plan that meets the risk profile of the investor. MPT encompasses several technical aspects in the development of what is termed an 'efficient portfolio'. An efficient portfolio which is a sub-set of minimum variance (risk) portfolios, is an optimal portfolio as it provides the best attainable trade-off between risk and return. Frino et al. (2006) suggest that a rational investor would always choose a portfolio that provides the highest return for a given level of risk or the lowest risk for a given level of return. The specific efficient portfolio chosen by an investor will depend on their risk preferences.

Under defined contribution plans individuals are partially responsible for their asset allocation decisions. That is, the retirement (superannuation) fund will present a number of investment fund choices from which individuals are then required to make an asset allocation choice. The options presented are various asset funds provided by the fund manager. The asset allocation decisions for each fund option are the responsibility of the manager. However, the choice of which options and the allocation amongst these choices are the decisions of the fund member. Finance theory assumes that a rational investor will make investment choices within the fund that will reflect their preference for risk and lead to efficient diversification.

3.3.5 Naïve Diversification and Heuristics

Benartzi and Thaler (2001) investigated diversification strategies as part of an investor's asset allocation decision. They found evidence to suggest that people use 'rules of thumb' to determine their asset allocations. This approach is also expressed by the authors as a 'diversification heuristic' or 'naive' diversification. Shefrin (2002, p. 14) describes heuristics as "…back of envelope calculations that come close to providing the right answer" and warned that "…heuristics may involve bias, meaning they may tend to be off target in a particular direction…"

Benartzi and Thaler (2001) showed that some investors follow the '1/n strategy' in that they divide their contributions evenly across the funds offered by the plan. They

argue that naïve diversification could be costly in that the portfolio may not be efficient or it may not meet the risk profile of the individual. They further argue that the 1/n strategy may still produce reasonable diversification outcomes but "it does not assure sensible or coherent decision-making" (Benartzi & Thaler 2001, p. 96). They also show that plan design has a significant influence on the asset allocation outcomes of individuals. If the plan offers more bond funds and few equity options then the investor will create a conservative portfolio. On the other hand, a higher number of equity fund options will result in the investor's portfolio being substantially more aggressive. These outcomes may not necessarily suit the individual's requirements. For example, younger individuals may create a conservative portfolio when a more aggressive approach might be required.

Liang and Weisbenner (2002) found that retirement plan characteristics strongly influenced investment decisions by participants. They also found evidence to support the concept of naïve diversification. More specifically, they were able to show that when presented with more investment options, plan participants tend to follow the 1/n rule.

In contrast to the above studies Huberman and Jiang (2006) draw their data set from archives of individual records of 401(k) plans rather than aggregate-level data analysis. Support was found for the 1/n heuristic, but this support was weaker when more funds were offered to participants. The data revealed that participants mostly used three to four funds in their plans, regardless of the number of fund choices available. However, their evidence provided no support for framing effects. That is, a higher level of equity fund options offered did not significantly influence participants to have proportionally higher portfolio weightings in equity. The authors therefore conclude from their results that investors do not deviate from "rational choice". In these circumstances rational choice is best described as consistency in behaviour regardless of the amount and variation of fund options offered to participants. However, the alternative conclusions put forward in this study were qualified where it was stated by Huberman and Jiang (2006, p. 797) that it:

> …may be a statement of the low power of the test, a statement that the data are not suitable for the task, or a statement of the weakness of the alternative hypothesis.

Using multi-period data (panel data) of 401(k) plans from the US, Brown, Liang and Weisbenner (2007) found that asset allocation decisions of participants were influenced by both the number and mix of investments options made available to them. Similar to the findings of Benartzi and Thaler (2001) their evidence suggests that an additional equity fund option will result in an overall increase in participant allocations to this asset class. This was also found to be the case for additional options in other asset classes such as company stock, fixed income funds and balanced funds. Brown, Liang and Weisbenner (2007, p. 2011) conclude that:

> This strongly suggests that average participants are not optimally allocating their portfolios according to standard finance theory predictions, but instead are following naïve strategies that subject them to manipulation by non-binding changes in the number and mix of investment options.

An Australian study by Gerrans, Clark-Murphy and Speelman (2006) examined decisions by members of an industry superannuation fund (Health Employees Superannuation Trust Australia (HESTA) for the period July 2003 to December 2004. The superannuation fund offered members a total of 14 investment options. These included six ready-made investment plans and eight single asset classes. The ready-made plans were based on strategic asset class allocations and varied from funds comprising shares only to more balanced funds. It was found that the majority of choices involved only ready-made investment plans and that almost a quarter of the members made a change to allocate their funds across more than one ready-made investment plan. Gerrans et al. (2006, p. 14) suggest "a possibly naïve view of diversification unless members are conscious of resulting asset allocation".

The implications of financial behaviour when it comes to retirement savings decisions was emphasised by Kahneman (2003, p. 1468) in his Nobel lecture where he refers to the study of Benartzi and Thaler (2001) as part of a:

> …growing literature of field research and field experiments that documents large and systematic mistakes in some of the most consequential financial decisions that people make, including choices of investments…

VanDerhei, Holden, Alonso and Copeland (2008) provide 2007 data indicating that more recently employed individuals are investing their 401(k) assets in balanced funds, including life-cycle funds. This increase in participation in balanced funds was also evident among recently employed young workers. This provides evidence that increasing numbers of workers in 401(k) plans may be seeking balance or diversification within their investments.

McClatchey and VandenHul (2005) using a rolling period optimisation model, created portfolios with the similar ex ante risk to a number of naïve 1/n strategies, to determine whether optimisation could improve return performance. Their results indicate that optimisation does outperform most naïve strategies and, based on asset allocations and time to retirement, it improves an investor's accumulated wealth by 2-30 percent.

3.3.6 Reliance on Past Performance

Mitchell and Utkus (2006) suggest that investors rely on past performance and fail to account for expected returns and risk. Behavioural implications relating to both representative and availability heuristics are used to explain these phenomena (see Tversky & Kahneman 1974). It is suggested that individuals view "patterns in a small series of randomly drawn numbers and, when making decisions, they attempt to impose some order or structure on the information that they see" (Mitchell & Utkus 2006, p. 89). The availability heuristic implies that decision makers rely on knowledge that is readily available to them rather than examine other alternatives or procedures. That is, individuals have the tendency to base their judgements on past information. Investment plan data are a readily available source of information that investors can access cheaply from websites and newsletters. Therefore, when faced with difficult decisions, investors tend to rely on past performance.

3.3.7 Endorsement Effect

Liang and Weisbenner (2002) found evidence that pension fund participants will see fewer investment options as an indicator to invest in their corporation's stock, and the

default option as some sort of recommendation. Where employers provide a match stock in their retirement scheme employees tend to more than match by contributing an even larger share of their own contributions in company stock. These findings support the conclusions of Benartzi (2001) and Madrian and Shea (2001a) who found evidence that participants appear to interpret the match contribution and the default option as investment advice. Benartzi (2001, p. 1752) termed this the "endorsement" effect and suggested that "it is possible that employees interpret stock matches as an endorsement or as implicit advice". Through survey evidence, Benartzi (2001) provided evidence that this effect may also apply to other investment alternatives. In his survey respondents indicated that they would increase their own purchases of stock if the employer matched contributions with international stock. Consistent with the findings of Benartzi (2001), Brown, Liang and Wiesbenner (2007) found that restrictions on company stock are perceived as investment advice and result in a move away from equity to lower risk assets. However, VanDerhei, Holden, Alonso and Copeland (2008) reference statistics that indicate that the share of 401(k) accounts invested in company stock is falling and that in 2007 this stock constituted 10.6 percent of all 401(k) accounts. They also indicate that recently employed 401(k) participants were less likely to hold employer stock.

3.3.8 Familiarity Bias in Investment Choice

There is a thought that people invest in the familiar while ignoring the principles of portfolio theory. Employees in the US will often hold substantial levels of company stock in their defined contribution plans. Huberman (2001, p. 677) suggests that:

> …people look favourably upon stocks with which they are familiar and think of them as more likely to deliver higher returns, at lower stock-specific risks. And this view tilts portfolio weights towards familiar stocks.

However, holding company stock is said to be risky and costly as the employee is not fully diversified and therefore expected returns on the portfolios are lower than equally risky, but fully diversified, portfolios (Meulbroek 2005). Familiarity bias also extends to individual bias towards domestic asset markets (home bias). It is claimed

that investors do not diversify enough internationally (Aggarwal 2004) and sub-optimal diversification may therefore occur (Gunasinghan & Zavone 2005). A study by Chan, Ng and Covrig (2007) of 26 mutual funds from 26 developed and developing countries found evidence of disproportionate allocations towards domestic shares. However, a study in Australia by, Gerrans, Gardner, Clark-Murphy and Speelman (2006) concluded that members of a government employees' superannuation fund appeared to make asset allocations that were in line with a 'normal' allocation to international equity.

3.3.9 Framing and Default Choices

It is argued that many individuals will deviate from predicted life-cycle behaviour in that they can be easily influenced by how a decision is presented to them, or framed (Mitchell & Utkus 2006). Shefrin (2002, p. 29) summarises the frame dependence as "…the way people behave depends on the way that their decision problems are framed".

Superannuation fund members in defined contribution plans are usually presented with a menu of investment options and asked to make a choice. Mitchell and Utkus (2006, p. 87) argue that:

> …menu design is a more powerful influence on participant decision-making than the risk and return characteristics of the investment choices offered.

In the Benartzi and Thaler (2001) study it was reported that the array of funds offered to plan participants can influence their asset allocations. Using a combination of controlled experiments and information from a database that covered 170 retirement savings plans their empirical evidence confirmed that the menu of funds offered affects the resulting asset allocation. It was shown that if the retirement plan offers relatively more fixed-income funds the participants were likely to invest more conservatively. If the plan offered relatively more equity funds the participants were more likely to invest aggressively. Benartzi and Thaler (2001, p. 96) concluded that:

> While the diversification heuristic can produce a reasonable portfolio, it does not assure sensible or coherent decision-making.

With automatic enrolment an employee is signed up by the employer for the retirement plan at a given contribution rate. The employee maintains the right to withdraw from the fund. Mitchell and Utkus (2006) suggest that if individuals are faced with a difficult choice when automatically enrolled in a plan, they will simplify the problem by accepting the available default option (a choice made by others). That is, they will do nothing.

Choi, Liabson, Madrian and Metrick (2001) used administrative data from three large US firms and analysed the data to determine the impact of automatic enrolment in 401(k) plans on participation rates, saving behaviour and asset accumulation. They found that automatic enrolment had a dramatic impact on retirement saving behaviour, but participants were generally anchored in a low default savings rate and in a conservative default investment vehicle. It was shown that about 80 percent of participants accepted both the default savings rate (2-3 percent) and the default investment fund (a capital stable or money market fund). Gerrans, Clark-Murphy and Speelman (2006) found that an Australian industry fund offering 14 investment choices had over 60 percent of the fund assets held in the default strategy. The evidence provides support for the notion that many participants in the defined contribution plans will accept the default option. Choi et al. (2001) found that automatic enrolment in 401(k) plans promotes wealth accumulation, but the low default savings returns in the conservative default fund 'undercut accumulation'.

In contrast to the US and Australian experiences, Engström and Westerberg (2003) found that 67 percent of Swedish pension plan members chose their investment portfolios. The authors suggest that this high participation in investment choice may have been the result of an extensive information campaign, media attention, and marketing efforts by the fund managers thus reducing the costs of individuals becoming informed. In response to the Engstrom and Westerberg (2003) findings, Orszag (2003) suggests that individuals may have more faith in privately managed funds than the Swedish publicly managed default option pension fund and, therefore, may elect to make investment choice to avoid automatic inclusion in the default

option. He suggests that Sweden has a long tradition of publicly managed pension funds and individuals have had time to make an assessment of public versus private management.

3.3.10 Choice Overload

Papke (2003) presented econometric evidence which showed that individuals provided with investment choice in their defined contribution fund are more likely to invest more in stocks, contribute more of their salary into the fund, and have more invested in their accounts than those without investment choice. However, research in the US by Iyengar, Jiang and Huberman (2004) found that too many options in investment choice lead to what they term 'choice overload'. That is, consumers are less motivated to choose and less motivated to commit to that choice. They suggest that too much choice leads to sub-optimal decision-making, as numerous choices commit the consumer to significant time and effort in order to make an informed comparison among the alternatives. They identified a choice between only two funds as an optimal offering. It was also shown that as choices increased, participation rates declined.

Agnew and Szykman (2005) used an experimental approach to determine the impact of choice overload on participants solicited at a mid-sized university via campus mail, email and flyers. A financial inducement of ten dollars was paid to all participants. A point of differentiation to previous studies in this area is that each participant was given a ten question financial literacy examination to determine the interaction of knowledge on the manipulated variables of information display, the number of investment choices and the similarity of those choices. The questions were adapted from the John Hancock Financial Services Defined Contribution Plan Survey and financial literacy examination used by Wilcox (2003) and Dwyer, Gilkeson and List (2002). Consistent with these previous studies they found that many participants exhibited a low level of financial literacy. The participants were then separated into two groups on the basis of financial knowledge (above average/below average). When presented with choices, those with above average financial knowledge reported less choice overload. Plan design did not have any impact on choice overload for those

with less financial knowledge. An important finding was that respondents with lower financial knowledge were more likely to opt for a default option. They are also more likely to be overwhelmed by the investment decision they faced.

Clear evidence emerges that low financial literacy is likely to inhibit an individual's ability to exercise appropriate choice in investment decision-making for retirement saving. Other pertinent results that emerge from the Agnew and Szykman (2005) study is that the less educated, lower paid individuals and women tend to have less knowledge of financial matters. Agnew and Szykman (2005, p. 69) signalled that:

> It is daunting for plan sponsors to attempt to educate the most vulnerable participants, and more research into new and innovative methods is needed.

Kamenica (2008) suggests that when presented with a large number of options an individual is more likely to select the simpler alternatives (contextual inference theory), that is, those options where the outcomes are more transparent to the decision maker. Therefore, when faced with a large set of choices an individual is reluctant to select an option that they do not fully understand (choice overload). Iyengar and Kamenica (2007) tested the contextual inference theory as a possible explanation for choice overload. They conducted two experiments by approaching individuals in the street and seeking their participation. The first experiment indicated that the participants were more likely to select a sure bet over 'non-degenerate' gambles. The second experiment clarified that excessive choice will lead to a preference for the simpler rather than more risky options. Iyengar and Kamenica (2007, p. 9) conluded that:

> Jointly, these experimental findings support the prediction of contextual inference theory that increasing the size of the choice set strengthens the appeal of easier-to-understand options.

In addition to the experiments, Iyengar and Kamenica (2007) utilised records of more than 500,000 employees from 638 institutions and demonstrated that when faced with more funds in a 401(k) plan, the greater was a person's allocation to money market and bond funds at the expense of equity funds. The implication is that individuals will

seek the easier-to-understand investments rather than the more risky options (contextual inference theory).

3.3.11 Peer Effects on Choice

Benartzi and Thaler (2007) suggest that rational unsophisticated investors may seek expert financial counselling. However, for a number of individuals they tend to seek advice from their spouses and friends rather than from financial experts (Benartzi & Thaler 1999). Duflo and Saez (2002) found peer effects play a role in retirement savings decisions of employees of a large US university. The results provided evidence that decisions taken in an individual's peer group will influence both their decision to participate and their choice of a mutual investment fund. Duflo and Saez (2003) demonstrate how financial communications can influence not only an individual's behaviour, but also the behaviour of others in their work group. The authors conducted an experiment using individual data on employees of a large US university. A random sample of employees within a group of departments was offered a financial incentive to attend an employee sponsored benefits information fair. In the departments where financial incentives were offered it was found a significant increase in attendance occurred from both those who were offered an incentive and those who were not. They also found that individual enrolments in the retirement funds increased substantially between five and 11 months after the fair for those departments where the financial incentive was offered. They conclude that this evidence provides support for a social network effect (peer effect) for retirement saving decisions.

3.3.12 Prospect Theory

In retirement savings decisions, plan participants may not exhibit rational mean-variance behaviour. Kahneman and Tversky (1979) proposed prospect theory as a realistic alternative to expected utility theory. Expected utility theory states that the investor will choose between risky investments by comparing their expected utility. The calculation involves multiplying the utility values of possible outcomes by the respective probabilities to determine a weighted (expected) outcome. Prospect theory

also describes how individuals make choices in situations where they have to decide between a set of alternative risky investments. Their model is based on two distinctive features. First, individuals measure losses and gains, but not total wealth (as prescribed by expected utility theory). Second, individuals place more impact on losses than on gains (given the same variation in absolute value). Kahneman and Tversky (1979) also provide experimental evidence that when evaluating risky gambles individuals report losses to be around 2.5 times more painful than an equivalent gain. Prospect theory has potentially important implications for investment behaviour (Mitchell & Utkus 2006). In prospect theory, investors are risk averse when it comes to gains and risk seeking when it comes to losses. Investors tend to put more value to a gain that is certain than a gain that is less certain, even when the expected value of each is the same. Investors also endeavour to avoid a certain loss, even if it means taking greater risk.

3.3.12.1 Myopic Loss Aversion and Over-confidence

Benartzi (2008, p. 1) describes myopic loss aversion as "the tendency of individuals to focus on short-term losses, even if they have 20 or 30 years until retirement". It is suggested that many investors hold overly conservative portfolios because they focus on the potential for short-term losses (Shefrin 2002). This aversion to loss is said to lead to investors holding too little in equities and overweighting their portfolios towards fixed-income securities (Shefrin 2002). A portfolio invested in cash or capital stable assets is unlikely to provide the long-term growth that many individuals require to fund their retirement. Benartzi (2008) in his comments presented to the United States House Education and Labor Committee fears that the recent volatility in world financial markets resulting from the global financial crisis could magnify the degree of loss aversion that individuals display. Benartzi and Thaler (1999) found that the subjects in their study were willing to invest up to 90 percent of their retirement funds in stocks when they were shown distributions of long-term returns. Therefore, the way in which information is framed to investors can have a strong influence on their investment choice.

Shefrin (2002) suggests that over optimistic investors may select portfolios that are overly aggressive. It is noted that in the field of investment, over-confidence leads to sub-optimal behaviour that does not accord to the Markowitz (1952) mean-variance theory (Mitchell & Utkus 2006). Mitchell and Utkus (2006, p. 90) further explain that "overconfidence partly stems from a failure to understand the role of random chance in determining the future". Barber and Odean (2000) found that over-confidence contributes to investors trading excessively which results in poor investment performance. It was found that men are more confident than women and trade more excessively (Barber & Odean 2001). Mitchell and Utkus (2006, p. 90) note:

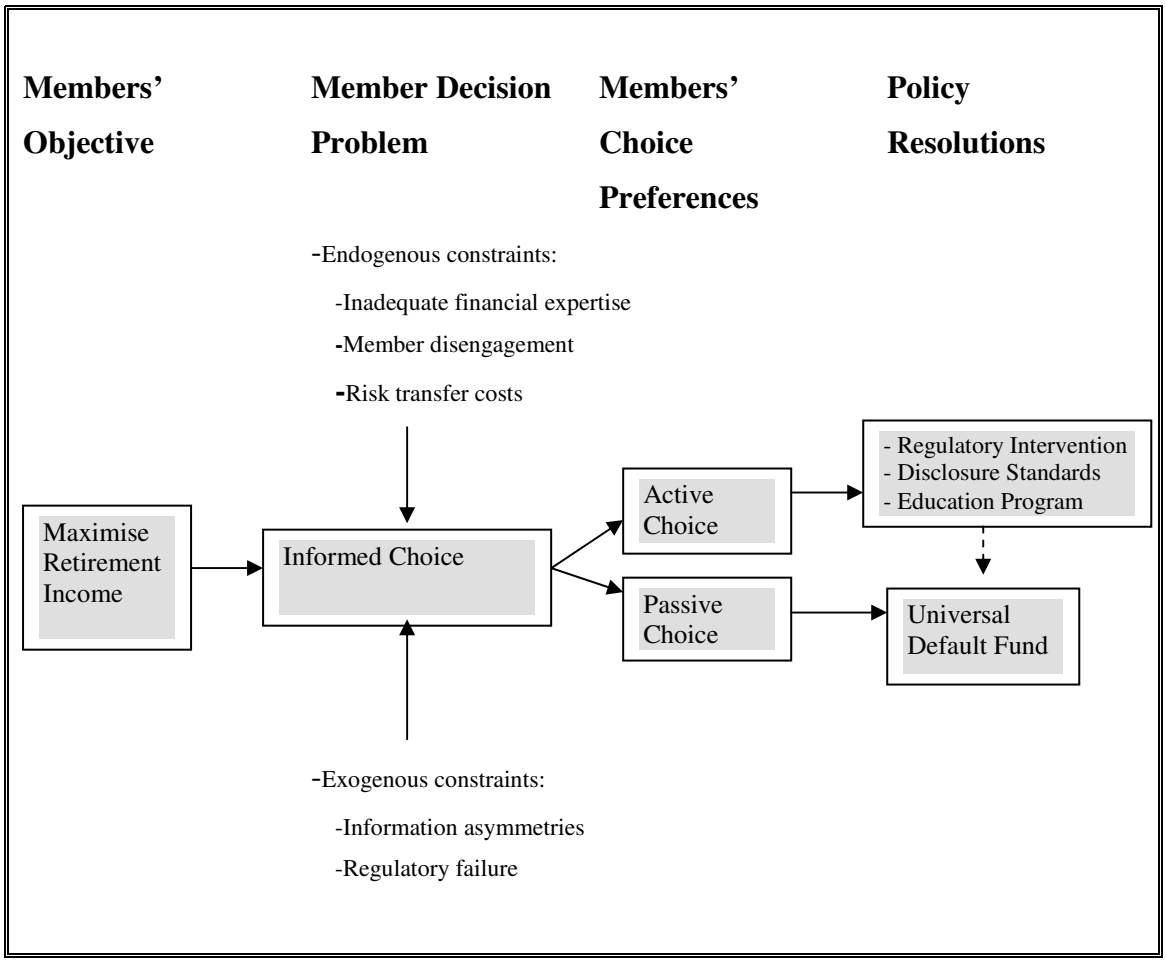
> Overconfidence also leads to insufficient portfolio diversification, as individuals put too much faith in stocks they selected and underestimate their relationship with the overall market.

3.4 A Theoretical Framework for Superannuation Fund Choice

Behavioural factors were identified by Brown, Gallery and Gallery (2002) as a major reason why superannuation fund members failed to exercise choice. They suggest "the nature and scope of appropriate member education is contingent on the capacity and willingness of members to exercise choice" (Brown, Gallery & Gallery 2002, p. 85). They propose the use of a universal default fund for all those members who are unwilling or feel unable to exercise choice. The universal fund they propose would be a government run national superannuation fund. The intention of introducing such a fund is that it would alleviate the investment risks the members face when making uninformed choice. They argue that "…there is responsibility on government to facilitate passive choice by providing a fund that is secure and preserves superannuation entitlements throughout working careers" (Brown, Gallery & Gallery 2002, p. 86). They also identified a superannuation choice framework that implies that informed choice will not occur because of various endogenous and exogenous constraints. Figure 3.1, adapted from Brown, Gallery and Gallery (2002, p. 74), depicts this framework.

Figure 3.1 refers to endogenous constraints as inadequate financial expertise, member disengagement and risk transfer costs. Brown, Gallery and Gallery (2002) suggest that a certain level of financial literacy is essential if members are to make informed investment choices. Informed decisions require an evaluation of fund investment strategy, investment portfolio, and the expected risks and returns, in order to evaluate a match to members' risk-return preferences. They also argue that many superannuation fund members lack the financial knowledge and skills necessary to perform such tasks.

Figure 3.1 Superannuation Choice Framework



Source: Brown, Gallery and Gallery (2002, p. 74)

Listed as exogenous constraints in Figure 3.1 are both information asymmetries and regulatory failure. Brown, Gallery and Gallery (2002) suggest that at the core of informed active choice are policy resolutions on regulatory intervention, disclosure standards and education programs. They argue (p. 79) that:

> Even if all the (endogenous) constraints could be effectively addressed the exogenous constraints of information asymmetry arising from multiple agency problems remain a pervasive problem confronting all employees in a choice environment. These problems are compounded by regulatory failures in the extant regulatory regime.

A policy resolution listed in Figure 3.1 is a member education program. Brown, Gallery and Gallery (2002, p. 86) argue that:

> …education programs should be targeted to those members who are prepared to actively engage in decisions regarding the management of their superannuation savings.

The Brown et al. (2002) model also incorporates a default fund option. It has been argued that it is justifiable for the government to run a default fund as it is obliged to provide support to those members who are incapable or unwilling to manage their own savings (Brown, Gallery & Gallery 2002; Brown, Gallery, Gallery & Guest 2004; Gallery & Gallery 2005). Brown, Gallery and Gallery (2002, p. 87), argue that:

> In combination, a standardised disclosure regime, appropriate member education and the option of a government-run default fund are more likely to lead to an environment where informed choice is achievable…

Clark-Murphy, Kristofferson and Gerrans (2002) surveyed members of UniSuper around the time of the formal introduction of the choice of fund legislation. Unisuper is an industry superannuation fund that covers employees in Australian universities. Clark-Murphy, Kristofferson and Gerrans (2002, p. 77) conclude that:

> The issue of knowledge is significant since there is consistent evidence that employees feel they are ill-informed about superannuation and may not be equipped to make decisions required of them.

The Clark-Murphy, Kristofferson and Gerrans (2002) study reviewed demographic influences on the extent to which respondents found the decision to stay with the defined benefit fund or switch to a defined contribution (accumulation) plan difficult, and why they found it difficult to make a choice between funds. The defined contribution fund offered a choice from four different investment strategies varying

from low risk (conservative) to high risk (aggressive). They found that 31.6 per cent of Unisuper members failed to respond to a request to make a choice of fund. Of those who did respond, 51 percent chose to remain with their existing arrangements (defined benefit fund), whilst the other 49 percent opted to move to a defined contribution fund. Brown, Gallery and Gallery. (2002) argue that member disengagement results from the individuals choosing to avoid having to make the complex investment decisions necessary as part of active choice. Further results, from the Clark-Murphy, Kristofferson and Gerrans (2002) statistical tests revealed that gender and age were significant factors in identifying which employees will experience difficulty with superannuation choice decisions. It was found that women and younger respondents were more likely to find the superannuation choice decisions more difficult.

Brown et al. (2004) surveyed a random sample of 620 academic staff from 14 Australian universities who were selected from staff from two Schools (Accounting and Finance, Physical Science). They examined why the majority of Unisuper members chose to remain in a defined benefit fund when offered the option of transferring to a defined contribution fund. Their findings indicate risk transfer costs played a key role in the majority of members rejecting the contribution fund choice. Brown et al. (2004, p. 6) state that:

> Becoming informed is costly, particularly in relation to complex superannuation issues. Such costs include the time taken to acquire, read and interpret relevant fund reports and other investment material, attend training sessions, and seeking professional advice from financial experts or other information intermediaries. There is also the risk and associated costs of making the wrong decision.

Brown et al. (2004) suggest a risk-return trade-off in the decision to stay with the defined benefit plan or transfer to a defined contribution fund. A switch to the contribution plan option could potentially provide higher returns but with less certainty, whilst remaining in the existing defined benefit plan had a more certain future outcome.

3.5 Financial Education

One aim in this study is to evaluate a financial education model to see whether it provides superannuation fund members with the required knowledge to assist them in making informed choices regarding their superannuation decisions. As part of this process it is necessary to define the term 'financial education' as it may have many different meanings in various contexts. Choi et al. (2002, p. 100) suggest:

> The definition of what constitutes 'financial education' is also subject to interpretation and is likely to vary from one respondent to another.

Fox, Bartholomae and Lee (2005, p. 195) state that:

> Financial education can include any program that addresses the knowledge, attitudes, and/or behaviour of an individual towards financial topics and concepts.

The definition used for the purpose of this study is a comprehensive and broad definition of financial education provided by an OECD Report (OECD 2005, p. 26) that defines financial education as:

> The process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being.

TheOECD further define information, instruction and advice as follows (OECD 2005, p. 26):

- information involves providing consumers with facts, data and specific knowledge to make them aware of financial opportunities, choices, and consequences;

- instruction involves ensuring that individuals acquire the skills and ability to understand financial terms and concepts, through the provision of training and guidance; and,
- advice involves providing consumers with counsel about general financial issues and products so that they can make the best use of the financial information and instruction they have received.

The broadness of this definition is necessary to capture a myriad of educational vehicles, materials and programs now provided to superannuation fund members by superannuation funds.

3.5.1 Implications of Financial Education on Behaviour

The issue of financial education promoting greater retirement saving has received widespread interest (OECD 2005). The provision of financial education to those who lack adequate levels of financial literacy is one of the tools that have been utilised, in various forms, to assist those making investment decisions. Hilgert, Hogarth and Beverly (2003) concluded that increases in financial knowledge may lead to improved financial management practices. It has been shown that as an individual's financial knowledge increases so will their ability to plan better and save for retirement (Lusardi 2005; Lusardi & Mitchell 2007b; Hershey & Mowen 2000). Further, on this issue Clark et al. (2006, p. 47) argue that:

> A lack of financial education may cause workers to start saving too late in life to realize their retirement goals. As a result they are unlikely to achieve an optimal balance between current consumption while working and future consumption in retirement. In addition, a lack of information concerning the risk-return distribution of various investments might lead them to misallocate their retirement portfolios.

Research has been conducted to evaluate the influence of financial education in changing individual savings behaviour and investment decision making for retirement savings. The implications of this research support the premise that various types of education programs do change the retirement saving intentions and behaviour of

individuals (Bayer, Bernhiem & Scholz 1996; Clark & Schieber 1998; Lusardi 2003; Bernhiem & Garrett 2003; Muller 2003; Nyce 2005; Lusardi 2005; Kerry, Clayton & Olynyk 2007; Clark et al. 2006). Maki (2004) argues that it is greater financial knowledge gained through education programs that alters household decision making. The importance of financial education was emphasised by Alan Greenspan (2002), former head of the US Federal Reserve, and reported in a prepared statement, that:

> Education can play a critical role by equipping consumers with the knowledge required to make wise decisions when choosing among the myriad of financial products and providers.

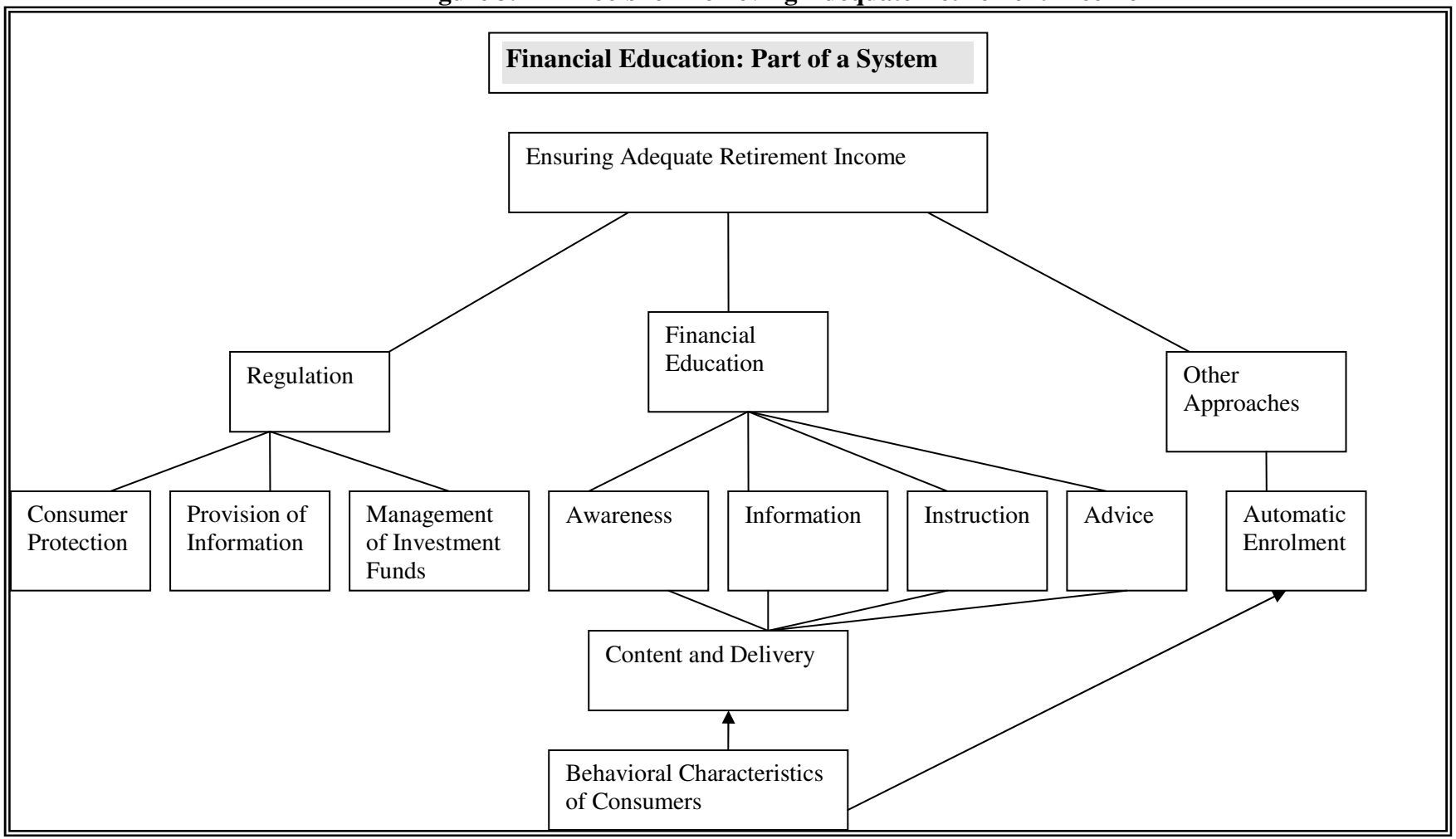
In Figure 3.2 'Tools for Achieving Adequate Retirement Income' the OECD (2008a) recommends that financial education should be complemented by regulation and other approaches such as automatic enrolment. However, the OECD emphasises the importance of financial education as a central tool in providing awareness, information, instruction and advice in ensuring that adequate retirement income is achieved. The OECD (2008a, p. 112) concludes that:

> Surveys and experience show how financial education is urgently needed, and can play an important role in helping workers achieve an adequate retirement income.

Content and delivery of financial education form an important element of the education model presented in Figure 3.2. The OECD (2008a, p. 112 state that "providers of financial education must ensure that the content and the mode of delivery are appropriate for the target audience". The current research will investigate whether superannuation fund provided education is providing defined contribution members with the resources necessary to make informed choices.

In this section it has been shown that the importance of financial education for informed investment decision making is well documented in the literature. It has also

Figure 3.2 Tools for Achieving Adequate Retirement Income



Source: OECD (2008a, p. 116)

been shown that individuals without appropriate financial knowledge and skills are likely to lack the capacity to save adequately for their retirement needs. Therefore, well directed and structured educational programs are required to eliminate individual gaps in knowledge. This approach may lead to more informed decision making on retirement savings issues. In the following sections a review of the structure and relevance, and extent of financial education in the workplace, is presented.

3.5.2 Workplace Financial Education

A significant portion of retirement education programs in the US are based in the workplace. This body of education is seen to be a response to the lack of both financial literacy and saving initiatives of many individuals (Lusardi 2003) and from the shift in retirement funding from defined benefit to defined contribution plans (Arnone 2004). Under a defined contribution plan the individual assumes the responsibility for making within-fund choice on asset allocation decisions. Clark et al. (2006, p. 47) state that:

> Recognising this lack of financial knowledge, some employers now offer financial education programs for their employees.

A practical definition of employer-sponsored participation education is provided by Arnone (2004, p. 1) as "…a program that helps employees develop skills to make informed decisions and take action to improve their financial well-being". Arnone (2004, p. 1) incorporates the following key elements in his definition.

- Helps individuals based on their status as employees of an organisation.
- Provides recipients with skill development, which may include either new competencies or the enhancement of existing competencies.
- Enables participants to make decisions about issues.
- Provides a basis of accurate, unbiased information for such decisions.
- Is action-orientated and thereby attempts to affect behaviour.
- Seeks the long-term result of improved financial well-being.

Garman (1997) argued that the main goal facing employers should be to provide personal financial education that will lead to a change in employee behaviour and motivate all of them to participate in retirement saving plans. Joo and Pauwels (2002) found that employer-provided financial education had a positive effect on retirement confidence. Kim, Kwon and Anderson (2006) also found evidence to support that those who received workplace financial education and advice were more confident about their retirement. Joo and Garman (1998) found a strong interest from clerical workers for workplace financial education, particularly for retirement planning and investing. Maki (2004) used cross-sectional household survey data from 200 survey responses and suggests that workers exposed to financial education in the workplace and school-based financial education will exhibit significant improvements in their knowledge of investment returns and their retirement fund. There is also further evidence to support that workplace education has an impact on the way workers plan and invest for retirement (Bernheim & Garrett 2003). Support for this view is provided by Clark et al. (2006, p. 48) who state:

> The general conclusion of this limited literature is that financial education provided by employers can increase retirement saving and potentially alter the investment allocation of assets in retirement accounts.

Employers and retirement (superannuation) funds have adopted the use of various educational approaches to financial education that include seminars, written mailed communications, web-based material and access to sponsor-provided financial counselling to enhance the financial literacy levels of individuals. Loibl and Hira (2005) established that this self-directed employer-provided financial information has a positive effect on employee financial management practices. The role of education has been justified by Clark et al (2006, p. 51) who argue that:

> If people preparing for retirement are not correctly informed of all the relevant factors or are not completely knowledgeable of the nature of the retirement savings process, it follows that they will not achieve their retirement objectives. If individuals acquire new knowledge in some period of their working lives, they will re-solve the optimization problem with the new parameter values.

Support for the use of financial education tools providing knowledge to investors who are either not saving or inadequately saving for their retirement has gained momentum. A US study (Clark et al. 2006) identified the lack of research on the question of how education influences savings decisions. They found that, when exposed to a financial education program, a significant proportion of respondents had revised their retirement savings goals and planned to change their savings and investments.

Further evidence on the importance of employer-based education is provided by Bernheim and Garrett (2003). They examined the impact of financial education in the workplace by surveying households. Their approach overcame a limitation of other related studies that measured only the role of workplace financial education on contributions to voluntary pension funds. Bernheim and Garrett (2003) examined the relationship between financial education and total savings (including saving outside the retirement plan). Through the analysis of data gathered from telephone interviews they conclude that employer-based financial education significantly increases retirement saving among low and moderate savers. However, the results do not provide support for an increase in total savings levels of these respondents.

Whilst reinforcing the importance of financial education to successful retirement planning, Clark et al. (2006) question the quality of programs offered by employers. As noted by Mitchell and Schieber (1998, p. 11):

> Pension educating is becoming increasingly important to sponsors of DC (defined contribution) plans. Participants vary according to the types of information they need and can process regarding investment risk, return and related issues. Examining alternative approaches to pension education reveals that the way pension education is presented can have a large impact on pension plan members' investment behaviour.

The evidence clearly supports the notion that financial education does indeed lead to higher retirement savings. Joo and Grable (2005) found that retirement confidence survey respondents who had participated in financial education programs were more likely to have a retirement savings program in place. Some questions emerge as to

how these programs can be best delivered to impact positively on behaviour (Mitchell & Schieber 1998).

Bell and Lerman (2005) point to existing research and suggest that there is a correlation between financial literacy and behaviour. Edminston and Gillet-Fisher (2006, pp. 3-4) suggest that the financial literacy literature reflects two main themes as follows:

> The first is that good financial behaviors are positively associated with higher levels of financial knowledge. The second is that financial knowledge and behavior are positively influenced by exposure to financial education.

Using survey data from employees of the Federal Reserve Bank of Kansas City, Edminston and Gillet-Fisher (2006) were able to demonstrate a relationship between workplace financial education and financial knowledge and behaviour. Their findings indicate that almost half of the respondents to their survey who possessed advanced or intermediate knowledge had previous exposure to financial education while only a small percentage of those exhibiting low knowledge had received this education. Their conclusions suggest that it is more likely that an individual will possess advanced or intermediate knowledge when exposed to financial education.

Using Rand (ALP) data, Lusardi and Mitchell (2007a) show that individuals exposed to company-based financial education programs are more likely to display higher levels of financial literacy. They establish that an improvement in financial literacy from an employer-based financial education program will lead to workers planning more for retirement. Further, Holland, Goodman and Stich (2008) in their analysis of a workplace financial literacy program found that employer-provided financial education programs positively influenced the participants' financial well-being. They also conclude from the literature that financial literacy in the workplace can increase an employee's ability to plan for retirement competently. Americk, Caplin and Leahy (2003) show that those who have a higher propensity to plan may better control their spending and, therefore, achieve their goal of wealth accumulation. A discussion of the nature, format and importance of the types of financial information offered to employees by employers or superannuation funds follows.

3.5.3 Educational Training Workshops and Seminars

Training courses in the form of workshops and seminars are often used to deliver financial information about retirement investment planning. Such courses are often targeted at specific groups of individuals and are usually focused on specific retirement savings matters. The providers of this form of information range from employers in the US to pension fund organisations in the Netherlands, and independent retirement investment information services in Australia (OECD 2008a). Evidence provided by Taylor-Carter, Cook and Weinberg (1997), who surveyed US university staff exposed to a retirement seminar, indicated that they had enhanced financial expectations of retirement. Hershey, Walsh, Brougham, Carter and Farrell (1998) found that when 23 US university staff were exposed to a brief educational training program, their knowledge of retirement financial matters was shown to increase, but retirement investment decision making did not significantly improve. However, evidence does exist that indicates individuals will change their behaviour when exposed to training courses. In the following sections a review is presented of the relevant literature on the influence these workshops and seminars have on changing the behaviour of retirement fund members.

3.5.3.1 Impact of Educational Seminars and Workshops on Participation and Contribution to Retirement Plans

Early examination of the impact of financial education in the workplace occurred in the US and can be found in the work of Bayer, Bernheim and Scholz (1996): the focus of their study was on employer-based retirement education. KPMG Peat Marwick Retirement Benefits Survey (1993 and 1994) data were acquired and used for the purpose of their research. The 1993 survey data were originally collected from a random list of 1,100 employers from a list of both private and public employers in the US with at least 200 employees. These same employers were used again in the 1994 survey. Bayer, Bernheim and Scholz. (1996) found that contributions to voluntary savings (401(k)) plans are significantly higher when employers offer retirement seminars and the effect was stronger for lower compensated employees. They also found a strong correlation between saving behaviour and the frequency of seminars.

No statistical relationship was detected for the effect of written materials on voluntary savings.

Kim, Garman and Quach (2005) surveyed 300 employees of a chemical producer in the southeast of the US who were or were not participants in one or more employer-provided financial education workshops. The survey yielded 178 useable responses where 100 respondents (56 percent) had attended the workshop, and 78 (44 percent) did not attend. The study examined the retirement savings of both the employee and their spouse: it revealed that those who participated in the workshop were contributing more money than those who did not participate. The results indicated no significant differences between the respondents on the basis of age, education, financial stressors and family size. However, gender, annual income and workplace financial education were significant factors. As the sample was taken from a single production company it may not be representative of all employees in the US and this limits the generalisability of the findings.

3.5.3.2 The Influence of Educational Seminars and Workshops on Retirement Savings Intentions

Kim, Bagwell and Garman (1998) evaluated workplace financial education of employees situated in the corporate headquarters of a US advertising firm. They administered a questionnaire after the conclusion of financial education seminars. The participants rated the seminar positively and found it very beneficial and informative in terms of providing financial education. Most of the participants anticipated a change in their personal financial behaviour as a result of the seminar. It was noted that a majority of respondents were voluntarily contributing to a 401(k) plan, and that most respondents were interested in attending further seminars. The Kim, Bagwell and Garman (1998) study also used rating scales to measure how respondents rated the financial education seminar on issues such as presentation, content and satisfaction and found a positive response on all measures. Most of the participants reported that they would take some personal financial action as a result of the educational seminar. The authors concluded that a single seminar does not satisfy all the financial educational needs of individual employees.

However, Madrian and Shea (2001a) indicate that after being exposed to financial education, many participants express their intention to start contributing to pensions or to increase their contribution, but fail to do so in the near-term. Moreover, Madrian and Shea (2001b) utilised administrative records of a company to determine the level of participation and savings behaviour of individuals in a defined contribution 401(k) plan prior to and after attending a retirement seminar. They found evidence to show increased participation in the 401(k) plan among those who attended the seminar, however, most of the seminar participants failed to make any changes to their savings behaviour.

Lusardi (2005) used data from a US health and retirement study to examine the financial position of older households. Their study claims to overcome some of the reported shortcomings of previous research (Bayer, Bernheim & Scholtz 1996; Bernheim & Garrett 2003) that ignored either personal information, pension plan information, or total wealth information of workers. The data set used in Lusardi's (2005) research provided information on household characteristics and wealth measures. The findings indicate that families close to retirement (50 years of age and above) accumulated little or no wealth. These families were found to have conservative portfolios of assets with only around 30 percent held in stocks. In particular, those families with low level education failed to hold any high return assets. Importantly and consistent with previous studies (Clark & Schieber 1998; Kim, Bagwell & Garman 2005) it was found that financial seminars had significant impact on retirement saving, especially for those who had low level education and low wealth. Consistent with the findings of Bernheim and Garrett (2003), the Lusardi (2005) study found that nearly all measures of retirement accumulation are greater when respondents are offered employer-based financial education.

Clark et al. (2006) examined responses of individuals to financial education seminars using data from three surveys of participants in seminars offered by Teachers Insurance and Annuity Association, College Retirement Equities Fund (TIAA-CREF). Their results support the educational value of the seminar and conclude that it can produce significant changes in how individuals engage their retirement savings and planning strategies. Their results indicate that a significant proportion of respondents had revised their goals and planned to modify their savings and investments. They

stress the importance of financial knowledge as a necessary part of optimal investment decision making. However, they question the quality of programs offered by employers and emphasise the importance of financial education to the success of retirement planning. Clark et al. (2006, p. 67) argue that:

> Greater efforts by employers can provide the resources needed to assist workers in the retirement planning and enable them to achieve their retirement objectives.

In Australia, Kerry, Clayton and Olynyk (2007) used a survey approach to interview participants attending an Australian Superannuation Fund (ASF) retirement seminar. The seminar covered issues on the adequacy of individual retirement plans, how much members needed to accumulate in retirement saving during their working lives to finance retirement, superannuation contribution rates and asset allocation decisions. They used a two-survey approach where questionnaires were distributed before and directly after the seminar. Post-seminar, the survey results identify that across the sample there was a minimal change in the average retirement age and income goal. They also show that after the seminar the confidence of members in achieving their retirement goals showed significant movement, and only a slight change in attitude towards investment risk was noted. For those who had previously made voluntary contributions they signalled, after the seminar, an intention to increase such contributions. Kerry, Clayton and Olynyk (2007, p. 84) also state that:

> The primary focus of financial education should be to make the gap as narrow as possible, that is, ensuring individuals have realistic retirement expectations and are equipped with the requisite knowledge and skills to achieve those expectations.

3.5.3.3 Educational Seminars and Workshops on Asset Allocation Decisions

Muller (2003) utilised health and retirement study data (1992) from the US to investigate asset allocation decisions of a sample of 1,107 participants who held a defined contribution plan. Statistics indicated that 29 percent of participants attended a retirement class, with 79 percent of these seminars conducted in the workplace. She concluded that participating in a retirement seminar impacts on asset allocation

decisions for certain groups of individuals. It was found that retirement education seminars substantially increased the percentage invested in equities for individuals with a high aversion to risk. It was also found that those who were further away from retirement (eight years or more), were more likely to invest more in equities than those expecting to retire sooner.

Dolvin and Templeton (2006) used data gathered from a law firm in the US to analyse the asset allocation decisions of all members of staff. This study reported decisions made by employees at a single point in time rather than using survey data to determine the future intentions and/or investment actions of seminar participants. In this case the law firm changed its fund manager and all staff were required to restate their asset allocations. Employees and their spouses were provided with opportunities to attend a seminar on retirement investing. About 60 percent of the eligible staff attended the seminar. Dolvin and Templeton (2006) found that staff who participated in the seminar elected to hold more funds thus creating more diversified portfolios. They also found employees were more conservative in their asset allocations after attending the seminar. However, reducing risk through more conservative allocations did not result in lower expected returns. It was implied that seminar participants were able to create more efficient portfolios as a result of the financial education provided. Therefore, they were able to reduce investment risk without sacrificing portfolio return. They also found evidence of a naïve strategy to diversification with even splitting across investment alternatives. It is also recognised that the results of the study may not be broadly representative due to the small sample size. Dolvin and Templeton (2006, p. 137) conclude that:

> The overall evidence suggests that even the most basic education programs are beneficial and aid plan participants in structuring more appropriate portfolios.

This discussion has shown that there is significant evidence to suggest that financial education seminars do impact the way individuals plan and save for retirement. Moreover, a more structured approach to financial education has the potential to provide further efficiencies in saving behaviour. The implications of how education is delivered and supported require further investigation to determine whether these educational models meet the needs of superannuation fund members. In the next

section, an investigation of the content and implications of other communication methods used to convey financial information to individuals is presented. This is followed by a review of the extent to which this information is used.

3.5.4 Employer and Fund Manager Sponsored Financial Communications

Bernheim (1998) administered a short survey to pension/superannuation plan sponsors attending a workshop on 401(k) plans. The surveys were mailed to the participants prior to the conference to provide them with an opportunity to access any relevant company documentation. Responses were received from around 40 companies representing 20 percent of all companies attending the conference. Among these respondents, 78 percent indicated that they offered education. Newsletters (69 percent) and other written materials (86 percent) were the most common forms of employee communications followed by seminars (55 percent), one-on-one counselling (38 percent), interactive software (21 percent) and participatory workshops (15 percent). It was also concluded that participation in 401(k) plans was greater on average in firms that offered employee education, and that a high frequency in employee education programs improved participation rates more than low frequency programs.

The US accounting/auditing firm Ernst and Young commissioned a survey (Ernst & Young LLP Human Capital Practice 2004) on the role that financial education programs play in influencing participation in retirement plans. Their survey focused on employer-sponsored education programs. It was found that providing employees with brochure-type information was not sufficient to help employees navigate the complex topic of retirement investments. They identified one-on-one counselling as being more effective. The Ernst & Young LLP Human Capital Practice (2004, p. 4) survey results state that:

> …as pension programs place more decision-making responsibilities on employees, financial education programs must also evolve concurrently to address this added responsibility.

Ernst & Young LLP Human Capital Practice (2004) also found that written communications such as brochures and newsletters were the most widely employer-provided educational media, utilised by 91.9 percent of employers. Online information, online retirement calculators and workshops were also used extensively as educational tools to inform employees on retirement saving issues. Their evidence shows that whilst group education had some impact, personal phone or in-person counselling had a greater influence on employee investment behaviour. Their survey results indicate that only 33.9 percent of employers offered phone counselling on financial matters whilst 24.2 percent provided in-person counselling.

More recently Krajnak, Burns and Natchek (2008) cited an International Foundation of Employee Benefits Plans survey of its employer members along with employer members of the international society of certified employee benefit specialists in January 2008. The survey received responses from 351 members, which included corporations, public employers, professional service providers and multi-employer benefit plans from both the US and Canada. The survey results indicate that 70 percent of employers offer some type of education program for their employees or participants. The survey results also show that 77 percent of the survey participants indicated that they offer retirement planning; 60 percent offer investment education; 39 percent offer financial planning and 28 percent offer investment advice (respondents could select more than one answer).

The survey respondents further indicated that their organisations delivered their retirement and financial planning information in the following ways: group meetings with the plan provider was the most used (67 percent), followed by telephone consultation services (56 percent), website information (55 percent), group retirement-planning workshops (42 percent), financial counselling (39 percent) and newsletters (38 percent). The results of the survey showed that more employees are using electronic resources for financial planning initiatives. A large majority (84 percent) of those employers who offered website access provided retirement income calculators. The respondents also indicated that they offered non-interactive resources such as information, articles, glossaries and resource lists on their websites.

Krajnak, Burns and Natchek (2008) also found that this education was provided to almost all employee categories (executives, salaried employees, part-time and casual) with 78 percent including spouses. Age and years from retirement were the main eligibility requirements applied by some employers. Most employees (63 percent) had no eligibility requirements for access to this financial education. A majority (72 percent) of employers offered these educational programs during normal working hours. There was also a substantial reliance on outside providers in delivering the education programs: the cost of the programs was generally covered by employers.

3.5.5 Utilisation and Importance of Employer and Fund Manager Sponsored Information

The most frequently used way of providing retirement savings information is through written communications such as brochures, magazines, newsletters, annual reports, and websites (OECD 2008a). The information provided in written communications and websites is intended to be more broad-based and does not, therefore, specifically target any particular individual group. Clark and Schieber (1998) classified communication material distributed to workers at three levels as part of their research on factors affecting participation levels in 401(k) plans. The three level structure was as follows: the first level communication consisted of plan enrolment forms and periodic statements of account balances. At the next level, 'employer communications', employees were provided with generic newsletters about their plans prepared by consulting firms and investment managers that discussed investment related issues on market and economic trends. The third level communications provided more detailed information more specifically related to worker retirement saving plans.

The Clark and Schieber (1998) study used cross-sectional data collected by global human capital consulting firm Watson Wyatt. These data were collected by Watson Wyatt from nineteen employer administrative records in 1994. The firms were not chosen randomly, but rather on the basis that they were prepared to provide the required data. Using a multivariate logit model, the researchers concluded that the estimated effects of a firm providing both generic and specifically tailored

information could increase participation rates in these plans by 36 percent. It was found that generic information along with forms and statements could increase the participation rate by 15 percent while specifically prepared material on the company's own plan could increase the rate by 21 percent compared to only providing forms and plan statements. Clark and Schieber (1998, p. 82) argue that:

> Better communications by the company will improve the worker's understanding of the program and should lead to increased participation.

McCarthy and Turner (2000) used data from a 1990 survey of federal employees regarding a savings plan for federal workers to determine the impact of written communications on self-assessed financial knowledge. They provided econometric evidence indicating that financial education had a positive impact on knowledge and that increased financial knowledge leads to greater investment in equities within their retirement plans. Clark-Murphy and Gerrans (2001) found that Australian university superannuation fund members confronted with an option to change from a defined benefit to a defined contribution plan relied mostly on written communications (utilised by 87.8 percent of members). A much lower number of members (32 percent) accessed the website for their information requirements. They also found that 53 percent of respondents rated the written communications as the most important source for their decision while only 3.5 percent rated the website as the most important source.

Helman and Paladino (2004) reporting on the 14th EBRI Retirement Confidence survey indicated that those receiving educational materials or seminars from an employer or work-related retirement plan provider were likely to have used the material provided. It was found that written communications such as retirement benefit statements, brochures, newsletters and magazines were used by a majority of workers for their retirement educational needs. Seminars or group meetings were used by 43 percent of workers followed by individual access to a financial planner and workbooks and worksheets (41 percent). Online investment advice, other online services and software programs were used much less. The materials rated most helpful were individual access to a financial planner (23 percent), retirement benefit

statements (20 percent) and seminars or group meetings (20 percent). Helman and Paladino (2004, p. 14) emphasise that:

> Retirement educational materials and information can be effective in changing people's behaviour. Doing a retirement calculation and educational formats that allow people to ask questions and/or are personalised may be most effective.

Nyce (2005) extended the research of Clark and Schieber (1998) with the use of more recent plan administrative records and more extensive plan communication information. The information was collected directly from employer sponsors by Watson Wyatt between October 2001 and March 2001. The 401(k) plans in the data set are from 48 firms covering 306,463 employees. Whilst this sample was not chosen randomly, it was significantly larger then the sample data used in the Clark and Schieber (1998) study. Nyce (2005, p. 4) defines employer-sponsored financial information as:

> …written communication about the basic 401(k) plan, and brochures or newsletters highlighting general information about financial markets and the economy.

Nyce (2005) developed a four variable model from each firm's 401(k) communication program that included plan information, educational material, projection information and the percentage of communication material that is internet-based. With the use of multivariate regression models Nyce's central finding shows that the financial communications relating projections, education and web-intensity have a statistically significant impact on employee participation in the retirement plan. More specifically, web-based communications had the greatest impact on participation. It was also found that more sophisticated web-based financial communications were much more likely to increase participation rates for the average worker.

Loibl and Hira (2006) surveyed a randomly selected national sample of employees from a US insurance company. The data were collected at the conclusion of a six-month employer-sponsored financial education program. The education offered included workshops and self-directed learning offerings at the workplace which included financial planning software, financial planning websites and financial

planning publications. The education on financial planning was not specific to retirement saving, but covered many areas on personal financial matters. They found that the financial educational offerings in the workplace were used by employees and were useful in improving financial knowledge. Family, friends and co-workers were also found to play a role in initiating 'self-directed' financial learning. Further, it was found that using newsletters, publications, and internet-based software influenced reported financial and retirement knowledge.

The research considered in this section indicates that employer or plan-manager sponsored educational material, web-based communications and projection information is likely to impact statistically on participation rates. However, it is also necessary to explore what aspects of this information are being utilised by investors making investment choices, how it is contributing to their decision making, and whether current financial education and information structures adequately support informed decision making.

3.5.6 Combining Financial Education and Advice

The evidence pertaining to the impact of combining financial education with investment advice is now examined. White-collar employees of an insurance company located in three different mid-western states in the US were surveyed to gather their opinions on financial education and more particularly the use of individual financial advice (Kim & Garman 2003). These employees completed a survey questionnaire prior to receiving a 90-minute financial educational seminar. Three months later a follow-up post-assessment survey was also completed. In addition to the seminar a free 30-minute personal individual financial advice session was provided. A month after the financial advice session another questionnaire was completed. The results suggest that financial advice combined with financial education led to a substantial number of respondents indicating a greater understanding of financial issues and financial decision making. A number of respondents indicated that they changed their financial behaviour as a result of the program.

Ernst & Young LLP Human Capital Practice (2004) in their survey of US employers found that when employers instituted telephone or 'in-person' counselling as part of their financial education program they reported a significant change in participant behaviour. They reported increases in 401(k) plan participation and contribution rates in excess of 5 percent, and substantial asset allocation changes by employees in their retirement plans.

In their survey of Australian university superannuation fund members, Clark-Murphy and Gerrans (2001) found that only 11.3 percent of respondents utilised the sponsor funded financial advice when it came to deciding whether or not to move to a defined contribution fund. Therefore, when given an opportunity to combine other forms of superannuation fund provided information with financial advice, a majority of members failed to combine the information with advice.

3.5.7 Preferred Sources of Financial Information

Studies by Rhine and Toussiant-Comeau (2002) and Hilgert, Hogarth and Beverly (2003) have used subjective evaluations to look at how consumers prefer to receive information on financial issues. Rhine and Toussaint-Comeau (2002) reviewed data collected by the Metro Chicago Information Centre (MCIC) from the Chicago metropolitan area. The data were collected mainly by telephone interviews with some face-to-face interviews. It was found that the preferred method of delivery for all respondents was newspapers and magazines. The least preferred method of delivery for the whole sample was radio programs. It was found that lower income, less educated adults are less likely to select the internet as a tool to find information on personal finance issues and prefer formal courses offered within their local community. Low income and minority (disadvantaged) consumers were likely to select radio programs as a means of receiving information on financial matters, whilst older adults and minority groups had a preference for seminars.

Hilgert, Hogarth and Beverly (2003) used data from surveys of consumers conducted by the University of Michigan. Overall, it was found that households preferred to learn about money management through media sources (television, radio, magazines,

and newspapers), followed by informational videos and brochures. It was also found that financially sophisticated consumers were more likely to prefer the internet when compared to the less sophisticated consumers.

3.6 Resource Usage in Retirement Savings Decisions: Australian Evidence

Clark-Murphy and Gerrans (2001) surveyed members of a University superannuation fund (formely known as the Superannuation Scheme for Australian Universities SSAU) who were asked to choose between a defined benefit fund or one of four investment defined contribution accounts. Prior to July 1998, all members had benefits prescribed under a defined benefit fund. Between July 1988 and June 1999, existing members were given the choice of continuing with defined benefits or moving to a defined contribution plan. The investigation of the decision process of SSAU members was conducted by mail-out questionnaire. A sample of 10,000 members was randomly generated from over 48,000 members in the fund. The questionnaire was sent in October 1999 and a total of 2,407 responses was received representing a response rate of 24 percent. Figures obtained from SSAU indicated that 31.6 percent of members did not return the form, and by default they remained in the defined benefit plan. A further 33.3 percent chose to move to the defined contribution fund and 35.1 percent chose to remain in the defined benefit plan. The questionnaire sought information on the SSAU resources used by members in making their decision. They found that the information pack mailed to members was the most used (87.8 percent) followed by the seminars run by SSAU on campus (47 percent), website (32 percent), modelling program on website (24.6 percent), and information provided by the local SSAU representative (11.3 percent). Six percent of members indicated that they used no resources. When rating the importance of these items to their decision, respondents ranked the mailed information pack as most important (53 percent), followed by the seminars (27 percent), website modelling program (11.1 percent), local SSAU representative (4.2 percent), and the website (3.5 percent).

The questionnaire also asked members to identify what people they consulted in the decision process. The most consulted people were work colleagues (48.9 percent) followed by partners (46.1 percent), family and friends (18.1 percent), financial

planner (15.4 percent), and accountant (10.5 percent). A further 21.1 percent did not consult with another person when making their decision. When asked to indicate the most important persons consulted, work colleagues rated highest (31.6 percent), followed by partner (30.8 percent), financial planner (17.7 percent), accountant (9 percent), and family and friends (7.5 percent).

The current study significantly extends the Clark-Murphy and Gerrans (2001) study as this research reviews the extent to which informational resources are used for all superannuation decisions and not just for a single decision (which was whether or not to switch from a defined benefits plan to a defined contribution fund). This study focuses exclusively on those who have chosen to be in a defined contribution fund rather than all members of the superannuation fund. This study reviews whether the educational resources model is leading to a perception of informed choice. Further, it requires respondents to rate the contribution of educational resources to their knowledge for superannuation decision making. Rating scales are used to measure superannuation members' perceptions of specific educational resources. Further, the extent of failure to use the educational resources is identified and reasons why they are not utilised are discovered. This study assesses the importance placed on other non-superannuation provided resources (not just other persons) and measures the importance placed by superannuation fund members on friends and colleagues, financial newspapers, financial magazines, investment advice, and radio and television.

3.7 Theoretical Framework for the Research

In Figure 3.3 an outline of the theoretical framework for the research is presented. The theory suggests that the life-cycle permanent income hypothesis (Modigliani & Brumberg 1954) represents the rational ideal for individuals saving for retirement income. However, the behavioural model (Thaler 1994; Shefrin 2002) suggests that full rational reality does not occur when individuals are making decisions for their retirement savings. Educational programs for those individuals engaging in active investment choice was a partial resolution specified by Brown, Gallery and Gallery (2002) to achieve informed choice. The current study indicates that educational

programs based on different information sources leads to increasing rationality in superannuation choice decision making. The research examines the extent to which the available financial education sources are used and rated by defined contribution fund members in becoming informed on superannuation matters.

Figure 3.3 Theoretical Framework for the Research

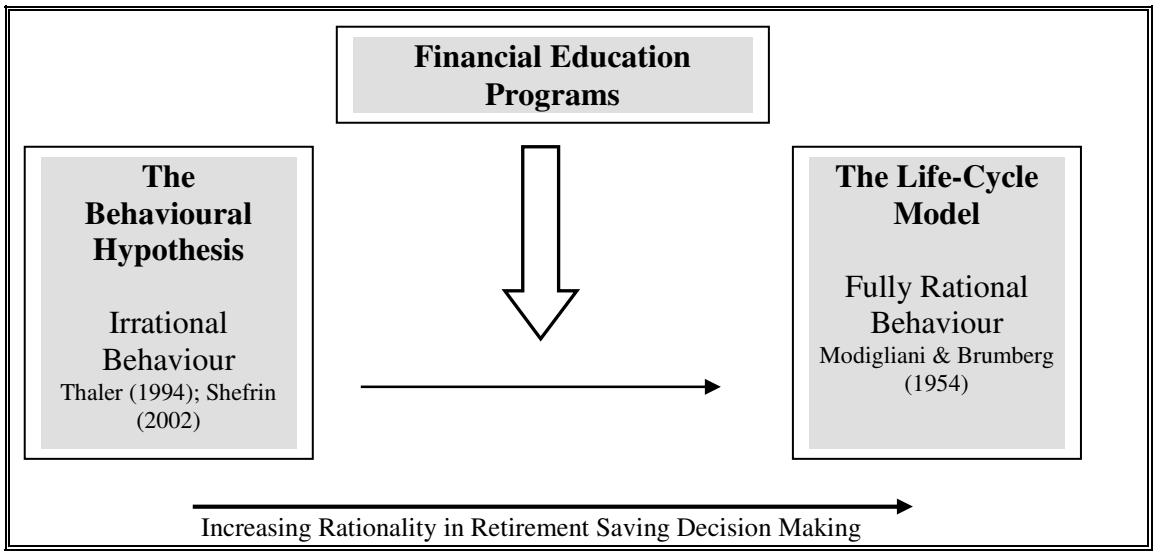


Table 3.1 identifies the research questions which are developed from the literature review. The Literature review and evidence gathered from the literature are listed in the Table to provide justification for the research questions. Descriptive data analysis in Chapter Five is used to address research questions one to six and inferential statistical analysis is utilised in Chapter Six to address research questions seven to nine.

Table 3.1 Research Questions and the Review of the Literature

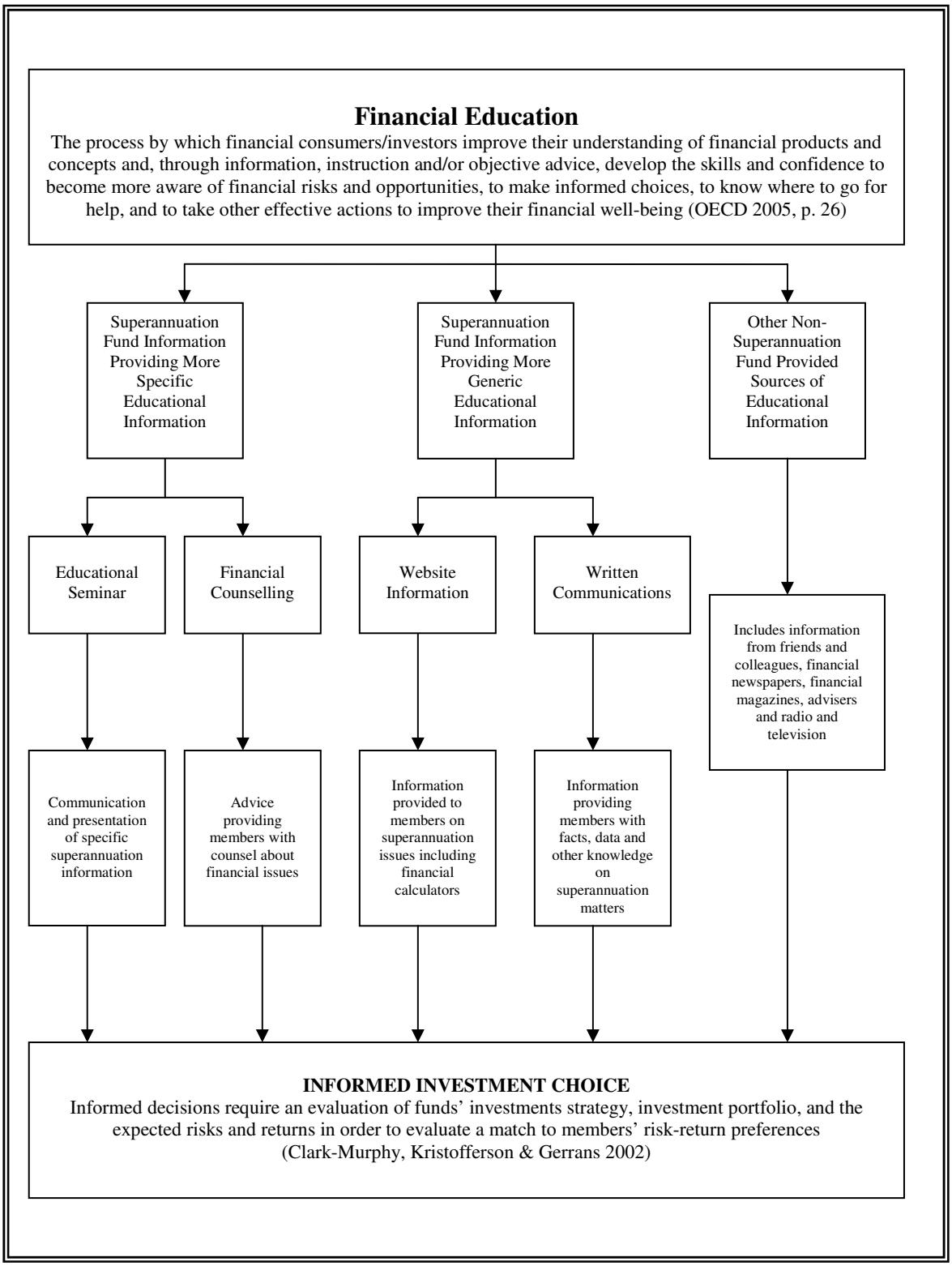
Research Questions Relating to Questionnaire Items	Evidence from the Literature	Literature Review
Question 1 What is the users' perception of the presentation of information in educational seminars? **Question 1A** To what extent do the users feel they are informed by the seminars? **Question 1B** Do users place importance on the educational seminar when it comes to their superannuation decision making? **Question 1C** How frequently do users attend the educational seminars?	Studies that found evidence that when employees/members attend financial education seminars or training courses it influences their retirement investment and savings behaviour.	Kim et al. (1998) Clark-Murphy & Gerrans (2001) Muller (2003) Ernst & Young LLP HCP (2004) Lusardi (2005) Clark et al. (2006) Kerry et al. (2007) Dolvin & Templeton (2006)
Question 2 To what extent do users' feel they are informed by the range of sponsor provided web-based educational information? **Question 2A** What importance is placed on sponsor provided web-based educational information when it comes to the fund member's superannuation information requirements? **Question 2B** Do users place importance in the information provided on the superannuation fund website for their decision making? **Question 2C** How frequently do users access the superannuation fund provided website?	Studies that found evidence of employee/member use of web-based educational communications and investment tools and that these resources influenced their retirement saving and investment behaviour.	Clark-Murphy & Gerrans (2001) Helman & Paladino (2004) Nyce (2005) Loibl & Hira (2006)
Question.3 To what extent do users feel they are informed by reading the written communications provided by the superannuation fund? **Question.3A** Do users place importance on superannuation provided written communications for their decision making? **Question.3B** How frequently do the users access the written communications provided by the superannuation fund?	Studies that found the use of written educational communication in retirement saving decisions by employees/members and that these resources influenced individual retirement saving and investment behaviour.	Clark & Schieber (1998) McCarthy & Turner (2000) Clark-Murphy et al. (2001) Helman & Paladino (2004) Nyce (2005) Loibl & Hira (2006)
Question 4 What is the users' perception of the communication of information provided by the financial counsellor? **Question 4A** To what extent do users feel they are informed by	Studies that identified that financial advice was used by employees/members and that this advice influenced individual retirement	Clark-Murphy & Gerrans (2001) Kim & Garman (2003) Helman & Paladino (2004) Ernst &Young LLP HCP (2004)

Research Questions Relating to Questionnaire Items	Evidence from the Literature	Literature Review
accessing the financial counsellor? **Question 4B** Do users place importance on superannuation fund provided financial counselling for their decision making? **Question 4C** How frequently do the users access the financial counselling provided by the superannuation fund?	saving and investment behaviour.	
Question 5 What are the reasons why superannuation fund members fail to attend the educational seminar, and why they fail to access the superannuation fund provided website, written communications, and financial counsellor?	Studies that show that reasons such as inertia, procrastination and self-control may influence retirement saving and investment behaviour.	Thaler (1994) Shefrin (2002)
Question 6 What is the importance placed by superannuation fund members on other non-superannuation fund provided sources of educational information?	Provided evidence that showed that certain groups of individuals have a preference for receiving information through media such as television, radio, magazines, newspapers, and that certain individuals are guided on their retirement savings and investment decisions by family, friends or colleagues.	Clark-Murphy & Gerrans (2001) Rhine & Toussaint-Comeau (2002) Duflo & Saez (2002) Hilgert et al. (2003)
Question 7 Do any significant differences exist between groups in respect of mean responses on the usefulness found in superannuation fund provided educational resources?	Provided evidence for group differences on the usefulness found in the various superannuation fund educational resources.	Clark-Murphy & Gerrans (2001)
Question 8 Do any significant differences exist between groups in respect of utilising the superannuation fund provided educational resources?	Provided evidence on group differences.	Clark-Murphy & Gerrans (2001)
Question 9 Do any significant differences exist between groups in respect of the importance they placed on non-superannuation fund provided educational resources?	Provided evidence of differences in group preferences for other non-superannuation fund or employer provided educational resources.	Hilgert et al. (2003) Rhine & Toussaint-Comeau (2002) Clark-Murphy & Gerrans (2001)

3.8 The Research Model

Figure 3.4 presents the research model for superannuation education developed in the current research study. This research model is an extension of the theoretical framework shown in Figure 3.3 where it was suggested that superannuation member education leads to more rationality in investment decision making. In this research Unisuper defined contribution fund members are asked to evaluate the educational information provided by their superannuation fund (educational seminar, financial counselling, website, and written communications), and the importance they place on non-superannuation fund information, namely, friends and colleagues, financial newspapers, financial magazines, advisers, and radio and television. The evaluation is based on the financial education guidelines provided by the OECD (2005) that suggest that financial education is a process by which financial consumers improve their understanding of financial matters through information, instruction and/or objective advice. The research literature indicates financial education impacts on how individuals plan and save for retirement. The educational seminar, financial counselling, website information and written communication were identified in the literature as educational resources that changed individual retirement savings behaviour. The evaluation provided by superannuation fund members of these educational resources will determine whether superannuation fund members feel they are being informed on superannuation fund matters.

Figure 3.4 The Research Model for Superannuation Education



3.9 Summary

This chapter contains an overview of the life-cycle model and the behavioural finance theories that assist in explaining why individual savings behaviour deviates from what is predicted by this model. Survey evidence indicates a lack of confidence among many individuals in that they will accumulate sufficient wealth for their years in retirement. The behavioural implications such as bounded rationality and bounded willpower are thought to be the main causes that limit an individual's capacity to plan and save adequately for their retirement. Bounded rationality assumes that individuals will fail to make strictly rational decisions and, further, lack the willpower to execute their intentions (bounded willpower). Individual behavioural traits, such as inertia, procrastination and heuristics, lead to behaviour which in inconsistent with the life-cycle model. Surveys show that there are several groups within the community that have low levels of financial literacy that inhibit their planning and saving for retirement. The literature suggests that those with higher levels of financial knowledge are more likely to plan for retirement.

Research shows that a number of superannuation fund members find it difficult to make decisions on how their savings should be managed, and often avoid having to make decisions. It is argued that education programs should be targeted to those fund members who are actively engaged in the management of their retirement saving. The review also indicates that financial education can change an individual's behaviour towards their retirement planning and saving. It was shown that educational resources provided by either the employer or superannuation fund, such as the educational seminar, website, written communications and financial counselling are all considered to be effective educational tools in changing a person's retirement savings and investment behaviour. The research framework for this study was also presented and its link to the educational research model explained. The research questions were developed and presented, together with references to relevant prior literature.

Chapter Four

Research Methodology

4.1 Introduction

In the previous chapter a set of research questions was developed that needs to be addressed. Having decided upon the research questions the researcher needs to decide how to go about finding answers to these questions. The path to establishing answers to the research questions will constitute the research methodology. Research methodology is a step-by-step approach to research enquiry that requires the researcher to select the most appropriate methods and procedures. Kumar (2005, p. 16) suggests that:

> At each operational step in the research process you are required to choose from a multiplicity of methods, procedures and models of research methodology which will help you to best achieve your objectives.

In this chapter the research methodology established to meet the research aims is outlined. The adopted methodology is described and justified. Specific references are made to how the sample was chosen. The chapter also includes a review of the construction, layout and administration of the instruments used in the data collection process. The issues of survey reliability and validity are discussed and ethical considerations are also addressed.

4.1.1 Review of Objectives

The purpose of this research is to evaluate a financial education model to see whether it provides superannuation accumulation fund members with the required resources to assist them in making informed decisions regarding their superannuation investment funds; and to determine the importance users place on this information for their overall superannuation decision making. It is also intended to determine which parts of the superannuation-provided education are not being used by superannuation

defined contribution fund members and the reasons they are not utilising these particular aspects of education. The literature identified four forms of education information that have an impact on a superannuation fund member's decision making. These are as follows:

- educational seminar;
- superannuation fund website;
- written communications from the superannuation fund; and,
- financial counselling provided by the superannuation fund.

In developing the methodology a set of questions has been developed that will allow the measurement of variables in order to answer the research questions. The research methods relating to this study are addressed in the following sections.

4.2 Research Paradigms

It is argued that theory building is the first stage in developing good explanations, and theory testing is then used in an attempt to test the theory that was developed in the theory construction phase (De Vaus 2002). Bryman (2004) suggests that it is useful to think of the relationship between theory and research in terms of deductive and inductive strategies.

4.2.1 Deductive and Inductive Theory

Both deductive and inductive thinking represent an important variation in social research (Babbie 2008). The deductive approach to research involves a starting point of theory testing. This approach adopts a set of testable propositions or research questions and data are then collected and analysed either to support or reject the theory. Therefore, this approach identifies the theory and then observations or findings are used to establish the validity of the theory.

Deductive theory is said to represent the most common view of the nature of the relationship between theory and social research (Bryman 2004). Given what is known about a particular subject and its theoretical underpinnings, the researcher deduces a hypothesis or hypotheses which are then subjected to empirical scrutiny. The researcher also needs to specify how the data are to be collected in relation to the concepts that make up the hypothesis (Bryman 2004).

The positivist (deductive) approach considers the purpose of theory is to generate hypotheses (research questions) that can be tested and that will thereby allow explanations of laws to be assessed. These research questions, relevant to the current study were developed in the literature review chapter.

In contrast, the inductive approach uses data collection as its starting point. These data are then analysed for any implications for propositions in theory construction. This approach is also referred to as grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1994) as it is based on observation rather than speculation. It is referred to as inductive reasoning as it involves starting with certain observations and then developing the theory from the observations (De Vaus 2002).

4.2.2 Quantitative and Qualitative Research Methods

On methodological issues it is useful to distinguish between quantitative and qualitative research. Quantitative research can be constructed as a research strategy that emphasises quantification in the collection and analysis of data. Qualitative research can be constructed as a research strategy that usually emphasises words rather than quantification in the collection and analysis of the data (Bryman 2004; Babbie 2008; Bouma & Ling 2004).

Quantitative research generally takes a deductive approach to research and incorporates the positivist paradigm. It also takes the "view of social reality as an external, objective reality" (Bryman, 2004, p. 19). In contrast, qualitative research predominantly emphasises an inductive approach to research, rejects the positivists view and, furthermore, "embodies a view of social reality as a constantly shifting

emergent property of individuals' creation" (Bryman, 2004, p. 20). The term 'interpretivism' usually denotes the alternative to the positivist view. Phenomenology is seen as one of the main intellectual traditions that has been responsible for the anti-positivist position. The interpretivist heritage incorporates the phenomenological tradition. Phenomenology is concerned with seeking to establish how individuals make sense of the world around them; a contrast is provided in Table 4.1 between the positivist and phenomenological paradigms.

Table 4.1 Comparison of the Positivist and Phenomenological Paradigms

	Positivist Paradigm	**Phenomenological Paradigm**
Basic Beliefs:	The world is external and objective	The world is socially constructed and subjective
	Observer is independent	Observer is part of what is observed
	Science is value free	Science is driven by human interests
Researcher should:	Focus on facts	Focus on meanings
	Look for causality and fundamental laws	Try to understand what is happening
	Reduce phenomena to simplest elements	Look at the totality of each situation
	Formulate hypotheses and then test them	Develop ideas through induction from data
Preferred methods include:	Operationalising concepts so that they can be measured	Using multiple methods to establish different views of phenomena
	Take large samples	Small samples investigated in depth or over time

Source: Easterby-Smith, Thorpe and Lowe (1991, p. 27).

The concept of research strategy was introduced to draw the distinction between quantitative and qualitative research as different research strategies. The other key decisions involve the choices surrounding the research design and research method.

4.3 Research Design and Methodology

The research paradigm entails the consideration of an inductive versus deductive and quantitative versus qualitative approach. An appropriate research design needs to be chosen so as to meet the aims of the research. The adoption of a specific research design is guided by the literature and only after careful and structured consideration of the various research methods. The research design provides the framework for collecting and analysing data.

Research methods include approaches such as questionnaires, structured or semi-structured interviews, observation and content analysis. The following is a summary description of the major types of research design that can be used in the research process in the social sciences.

4.3.1 Experimental Design

Experimental design involves quantitative comparisons between experimental and control groups with regard to a dependent variable. The research usually extends over time so that data can be collected at multiple stages. The independent variable is manipulated to gauge any changes in the dependent variable. The aim of the research is to determine if any differences exist between the groups. As an example, Rosenthal and Jacobson (1968) used an experimental design in a social science setting to conduct an experiment into whether teachers' expectations of their students' abilities in fact influence the school performance of the latter.

4.3.2 Longitudinal Design

This design involves data collection at different points of time. This repeated approach to collecting data is particularly useful in assessing trends and changes over a period of time. Typically survey research on a sample on more than one occasion is used to quantify the trends or changes. Content analysis is another technique that can also used to analyse documents relating to different time periods. Qualitative

interviewing on more than one occasion or qualitative content analysis of documents relating to different time periods is also used.

4.3.3 Case Study

The case study method usually involves the intensive study by observation or interviewing of a single case. It is most commonly used as a qualitative measure. Babbie (2008, p. 326) defines it as an "in-depth examination of a single instance of some social phenomenon". This method is often criticised as it provides limited generalisability to the population. However, Bryman (2004, p. 48) argues that "some of the best-known studies in sociology are based on this kind of design".

4.3.4 Comparative Study

This type of research involves a direct comparison between two or more cases. Surveys are commonly used to gather qualitative data for comparisons between cases. Qualitative interviewing on two or more cases is also used in comparative studies. These studies have often been used in a cross-cultural or cross-national format. For example, Kelly and De Graaf (1997) used secondary analysis of survey evidence collected in fifteen nations to examine the factors that have an impact upon individuals' religious beliefs. Another study by Crompton and Birkelund (2000) comprised research using semi-structured interviews of comparable samples of male and female bank managers in Norway and Britain to compare work/life balance. However, this type of research is not solely confined to comparisons between nations and can be applied to a variety of situations.

4.4 Research Method used in this Study

This study adopts a survey approach. Survey research is a frequently used mode of observation in the social sciences. Surveys can be used for descriptive, explanatory and exploratory purposes. Survey research is described as "probably the best method

available to the social researcher who is interested in collecting original data for describing a population too large to observe directly" (Babbie 2008, p. 270). Surveys are an effective vehicle for measuring peoples' attitudes, beliefs, opinions, motivations, and behaviour. Survey research is widely regarded as being inherently quantitative and positivistic (De Vaus 2002).

The term 'survey' is defined by Bryman (2004, p. 43) as a:

> Cross sectional design in relation to which data are collected predominantly by self-completion questionnaire or by structured interview on more than one case and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables which are then examined to detect patterns of relationship between variables.

The main advantage of the survey method is that it rarely requires a study of the whole population. Random statistical samples are commonly drawn from a population and inferences can then be made from the sample responses to the population. Therefore, surveys provide an efficient and economical means of gathering and analysing data about people's attitudes and orientations. The contribution of survey research to the methodology of the social sciences is emphasised by Kerlinger (1986, p. 381) when he describes its most important contributions as:

> …rigourous sampling procedures, the overall design and the implementation of the design of studies, the unambiguous definition and specification of the research problem, and the analysis and interpretation of data.

Weaknesses of survey research may commonly involve: a lack of depth in the survey data; large investments of time and resources; sampling errors; inadequate measurement that may produce unreliable and invalid results; and, non-response bias (Kerlinger 1986). For the current study, the treatments of these issues are dealt within this chapter.

4.4.1 Types of Surveys

Surveys can be broadly classified into three categories: mail and electronic questionnaire, telephone interview, and personal interview; they are the most common method of collecting survey data (De Vaus 2002). Each survey method has its place in social research. After careful consideration of all the advantages and disadvantages that each method offers, a well balanced choice needs to be made so as to meet the requirements of the research.

4.4.1.1 Mail Questionnaire

Mail questionnaires are posted out to respondents who then answer questions by completing the questionnaire personally and returning it by mail. Mail questionnaires can be administered quickly and usually at a relatively lower cost than the other two survey methods. This advantage is enhanced when the researcher is dealing with large geographically dispersed samples, however, the questionnaires may take several weeks before they are completed and returned. Another noted advantage is that there is an absence of interviewer impact on answers provided by the respondent (David & Sutton 2004). The respondent is in no way influenced by an interviewer when completing the questionnaire. Studies have found that the presence of any interviewer at all can produce biased responses (Groves, Fowler, Couper, Lepkowski, Singer & Tourangeau 2004). Furthermore, as there is no interviewer present, there is no variability in the order and way the questions are asked. Respondents also decide the time and speed at which they respond to the questionnaire. This convenience may further assist the response rate.

One of the limitations of the mail questionnaire method is the response rate. Generally mail questionnaires will typically result in low response rates. It is suggested that the main disadvantage of the mail survey is often the low response rate obtained (David & Sutton 2004). Czaja and Blair (2005) caution that mail surveys are prone to response bias because of low response rates, as a result, non-response may bias the research results. Further, errors may arise as the researcher has no control over the process as they do not get the opportunity to prompt or probe. Partially answered

questions are also more likely to occur than with other methods of data collection and there is no control over who completes the questionnaire. Other concerns relate to being unable to collect additional data and the fatigue factor experienced by respondents answering long questionnaires (Bryman 2004).

4.4.1.2 Electronic Questionnaire

A recent variation of the mail-out questionnaire is the electronic mail questionnaire. This can involve distributing the questionnaire as an attachment forming part of an electronic mail (email). With this method the survey is formatted with either word processor or with web-formatting language and attached to an email. The questionnaire is answered and returned by email by the respondent. A more recent alternative is to send an email with a hyperlink to a website containing the questionnaire. This type of electronic survey is often described as a web-based survey.

Many studies have compared response rates on mail-out and web-based surveys, and the results are mixed. A meta-analyses of thirty-nine study results published in the last decade shows that mail surveys have higher response rates than web-surveys in general (Shih & Fan 2008). Kaplowitz, Hadlock and Levine (2004) argue that web-surveys can achieve similar response rates to a mailed questionnaire. Whereas, Cobanoglu, Warde and Moreo (2001) found, that when respondents were given choice between completing a mail or web-based survey, the web-based option produced a higher response rate. Porter (2004, p. 9) suggests that there …"is difficulty in drawing conclusions about response rates from such studies".

One of the major sources of error in any survey is non-response (Archer 2007). Errors relating to non-response result when not all of the potential respondents complete the survey lead to non-response bias. Crawford, Couper and Lamias (2001) argue that non-response represents the biggest challenge for web-based surveys. It is suggested that an acceptable response rate for a mail questionnaire is above 50 percent (Mangione 1995). However, response rates between five and ten percent are common (Alreck & Settle 1985). Schonlau, Fricker and Elliot (2001) conducted a review of web-based surveys and found they achieved response rates in the range of seven to 44

percent. A number of techniques have emerged in the literature that can be used to maximise response rates for web-based and mail surveys (Dillman 2007; Ganassali 2008; Solomon 2001; Cook, Heath & Thompson 2000).

Most of the advantages and limitations of mail-out questionnaires also apply to electronic questionnaires. However, electronic surveys can be administered at a greater speed via the internet than mail-out questionnaires and may save time for the researcher (Wright 2005). When completed and submitted, the responses to the questionnaire are received immediately, either through a return email or a dedicated data base. Furthermore, responses are also likely to be received much earlier as they are returned electronically. Kwak and Radler (2002) found that a web-based survey had significantly shorter turn-around time compared to a mail survey. Web-based surveys are now relatively inexpensive and achieve satisfying response rates compared to the classical mail-out questionnaire (Ganassali 2008). The use of electronic questionnaires eliminates the need for paper and other costs such as printing, postage and data entry (Llieva, Baron & Healey 2002).

4.4.1.3 Telephone Interview

Telephone interviews involve making telephone contact with a selected sample and asking questions over the telephone. These interviews are usually administered from a central location as conducting the interviews from a centralised location allows for quality control and greater supervision of interviewers. When compared to personal interviews this method is cheaper and also quicker to administer. The cost saving arises from the fact that interviewers do not have to travel and thus the avoidance of related costs. This method provides the opportunity to interview a geographically dispersed sample more quickly. Moreover, better responses to embarrassing or personal questions may be achieved without face-to-face contact (McMurray, Spoonley, Pearson, Pace & Scott 2004). However, it is not possible to interview people that are not contactable by telephone and further difficulty may also be encountered when interviewing the hearing impaired. Frey (2004) claims that telephone interviews are less sustainable in time compared to personal interviews. He also claims that telephone interviews achieve slightly lower response rates when

compared with personal interviews. It is also difficult to use visual aids to assist responses in a telephone interview, and the interviewer is not placed to observe and therefore respond to facial or other signs of confusion or unease when asking a question (Bryman 2004).

4.4.1.4 Personal Interview

The personal interview method involves the collection of data from a respondent often using a face-to-face interview with a trained interviewer. Because of the face-to-face contact the quality of the responses in interviews is superior to mail-out questionnaires because of the depth and quality of data that can be collected. This approach lends itself more to open-ended questions where more detailed information can be gathered. The interviewer has the ability to provide explanations to questions where necessary and to probe further if they deem it important. This approach also provides the interviewer with the opportunity to use visual aids to assist with responses. The personal interview is usually the most costly survey method, but it is likely to produce a better response rate compared to other survey methods as respondents are less likely to terminate a face-to-face interview. Disadvantages of this method include a lack of anonymity which may cause some problems when dealing with certain confidential or sensitive questioning. Furthermore, an interviewer may introduce biases when questioning and subsequently influence responses.

4.4.2 Strengths and Weaknesses of Survey Research

Surveys, as with other data collection methods, have both strengths and weaknesses. These need to be kept in mind in determining whether a survey is appropriate for the research objectives. Drawing partly on Babbie (2008), Bryman (2004) and DeVaus (2002), an overview was developed to summarise the strengths and weaknesses of survey research. This overview is presented in Table 4.2.

Table 4.2 Strengths and Weaknesses of Survey Research

Strengths	Weaknesses
Large samples are feasible	Time consuming
Useful in describing characteristics of a large population	Can have low response rates
Can be administered from a remote location	The participants may have problems recalling information
Reliability is strong	Respondents may not answer truthfully on controversial or threatening questions
Can be inexpensive	The design is generally inflexible
Data are collected in a standardised format	Is comparatively weak on validity

4.5 Administering the Survey

This section of the chapter is divided into six major sub-sections. In each sub-section a major phase in the administration of the method in this thesis is referred to and discussed.

4.5.1 Phase I: Selecting the Type of Survey

A vitally important aspect of the social research process is for the investigator to select the most appropriate data collection method. In this investigation a web-based questionnaire has been chosen as the most suitable method for the study. This decision was made after careful consideration of the both the advantages and disadvantages of the different survey approaches. De Vaus (2002, p. 127) suggests that:

> The choice of a survey method depends on the nature of the survey, the sample, time and cost constraints, the importance of response rates and the types of questions.

As part of this decision process the Trochim (2006) framework was used in sections 4.5.1.1, 4.5.1.2, 4.5.1.3, 4.5.1.4, 4.5.1.5 and 4.5.1.6 to guide the decision. This approach asks several questions to guide the researcher towards an appropriate decision.

4.5.1.1 Population and Accessibility Issues

Population and accessibility issues	How the issue was addressed
Can the population be enumerated?	Yes, but the list was unavailable. University websites were used to identify the population.
Is the population literate?	All university staff were expected to be literate.
Are there language issues?	The sample was expected to adequately understand the English language.
Will the population co-operate?	Prior research on university staff suggests that adequate co-operation will occur.
What are the geographic restrictions?	Dispersed across Australia.

4.5.1.2 Sampling Issues

Sampling Issues	How the issue was addressed
Who are the respondents?	Australian university staff belonging to the Unisuper accumulation fund scheme.
Can respondents be contacted?	Email details are available on publicly available university websites. All respondents are expected to have email access.
Can all members of the population be sampled?	Judgement (purposive) sampling used to delineate the research sample.
Are response rates likely to be a problem?	An acceptable response rate was expected. Follow-up techniques were used to enhance the response rate (two reminder emails).

4.5.1.3 Question Issues

Question issues	How the issue was addressed
What types of questions will be asked?	Statements and closed-ended questions.
How complex will the questions be?	Simple and understandable language.
Will screening questions be needed?	Yes. The screening process will occur in the letter to respondents.
Can question sequence be controlled?	Yes.
Will lengthy questions be asked?	No.
Will long response scales be used?	Likert scaling was selected for use.

4.5.1.4 Content Issues

Content issues	How the issue was addressed
Can respondents be expected to know about the issue?	Respondents expected to be aware of superannuation issues.
Will respondents need to consult records?	No.

4.5.1.5 Bias Issues

Bias issues	How the issue was addressed
Can social desirability be avoided?	Mail-out and electronic questionnaires can provide anonymity for the respondent and therefore this concern is avoided.
Can interviewer distortion and subversion be controlled?	As with face-to-face and telephone surveys electronic questionnaires do not suffer from this disadvantage.
Can false respondents be avoided?	The survey was sent to individual email addresses. Therefore it is unlikely that another person would access and respond to the survey.

4.5.1.6 Administrative Issues

Administrative issues	How the issue was addressed
Costs	The mail-out survey and especially the electronic survey has the lowest cost of all survey methods. Cost was an issue that was considered in determining the use of the electronic questionnaire.
Facilities	The required technical facilities were available to facilitate construction and implementation of the survey instrument. The survey monkey software was used in the construction of the survey.
Time	The electronic survey was favoured as it allows for questionnaires to be received immediately by respondents once sent through the email system. It is also time efficient for sending further reminders. Furthermore, responses to the survey are collected immediately through an electronic data base managed by survey monkey.
Personnel	Unlike the face-to-face and telephone interview surveys, the electronic questionnaire is self-completed by respondents without any interviewer assistance. Therefore recruitment and training of interviewers are avoided.

4.5.1.7 Selection of the Web-based Survey Approach

Due to the geographical dispersion of the sample and the public availability of staff contact details a web-based survey approach was favoured. The sample comprised six thousand university staff dispersed throughout Australia. The internet approach was chosen over a mail survey as the web-based survey provided time savings, cost savings and a suitable structure and layout for the questionnaire.

The questionnaire contained a number of contingency questions where the respondents had to proceed directly to a specific section of the survey based on the response to a question. The advantage of the web-based survey is that it allows the designer of the survey to automatically direct respondents to a particular section of the survey based on their response to filter questions. Further, consideration was given to the likelihood that substantially all university staff would have access to a computer and email and could therefore be contacted electronically. Importance was placed on the fact that the survey data would be automatically placed in a database providing the researcher with immediate access to responses as they were submitted. This meant that survey responses would not have to be manually transferred from surveys when received, thus avoiding transcription error and allowing for the immediate analysis of the data.

4.5.2 Phase II: Constructing the Questionnaire

Once the researcher has established the questionnaire objectives and made a decision on the type of questionnaire and the method of communication, the construction of the questionnaire then follows. The way a questionnaire is designed is very important to its success as a data capturing instrument (Brace 2004). Dillman (2007) links the research objectives of reducing non-response and avoiding measurement error to appropriate questionnaire design. It has been shown that a respondent-friendly questionnaire design can provide increases in response rates (Dillman, Sinclair & Clark 1993). This point is supported by Tourangeau, Rips and Rasinski (2000) who suggest that the presentation of the questionnaire is one of the most important variables affecting the response process.

Within the survey method literature there have been many contributions providing some guidance on how to construct an effective questionnaire in order to achieve appropriate responses (Bradburn & Sudman 1979; Sudman & Bradburn 1982; Converse & Presser 1986; Dillman, 2007; Oppenheim 2001). Despite all this relevant research concerning the impact of questionnaire design on response effects, there is no definitive theoretical framework available to structure this knowledge (Ganassali 2008). However, there is still substantial guidance within the existing literature to assist the researcher in maximising reliability, validity and efficiency within the questionnaire design. The following discussion will focus on relevant design issues such as questionnaire layout, question content, question format, response format, and the order of questions.

4.5.2.1 Questionnaire Layout

For web-based questionnaires the author has to ensure that the layout on each screen is easy to read, with sufficient space and clear information about navigation. The questionnaire was administered on 'Survey Monkey' software. The software facilitates the construction of a web-based survey using the various question types considered necessary. The software also allows for the incorporation of an introductory section that includes all the instructions on how to navigate through the survey. In the instructions, the confidential nature of the survey was emphasised and an assurance that all responses would remain anonymous was provided. An invitation letter was included as part of the email and did not form part of the questionnaire (refer to section 4.5.3.8 for more detail). When developing the questionnaire layout the following factors were considered: appearance, length, instructions and the logical flow of questions.

Appearance

The appearance of the questionnaire was guided by the survey monkey software. Different options were provided on background colour, character font size and style.

A decision was made to adopt a light blue background colour as it accentuated the information in a way that improved readability.

Length

There is a general belief that long questionnaires should be avoided. The reasoning is that a long questionnaire will increase the burden on respondents and they will, therefore, be reluctant to participate. For traditional paper-based mail-out surveys, Dillman (2007) suggests that to obtain high response rates the questionnaire must be perceived by the respondent as easy and fast to complete and visually appealing and interesting. However, on the available evidence this assertion has little empirical support (Yu & Cooper 1983; Bogen 1996) The findings on web-based surveys produce no evidence that long questionnaires reduce response rates (Galesic 2002; Archer 2007; Ganassali 2008). It is difficult to disentangle the impact of questionnaire length from others factors such as the topic area, mode of administration, sample type and format (DeVaus 2002), although continued support for the notion that shorter questionnaires will increase response rates is still well supported in the research literature (Bryman 2004). With this in mind a decision was made to keep the questionnaire as short as possible while not compromising the research objectives.

Instructions

The instructions for completion of the questionnaire were divided into four parts, as follows: general instructions; section instructions; question instructions; and, 'go to' instructions. In the initial phase of testing it was shown that these instructions were clear, unambiguous and easily readable. The general instructions in the introduction provided guidance on how to navigate through the electronic questionnaire. The section instructions were designed to provide an introduction to and information about the topic area and question instructions were included below the section instructions. For example, 'please click the appropriate box' was a commonly used instruction throughout the questionnaire. This process was further simplified by the use of closed-

end questions. 'Go to' instructions were also used and the respondents were automatically directed to relevant sections after completing filter questions.

Vertical Flow

The flow of questions should follow a logical path commencing with general questions and moving to the more detailed questions (Thomas 2004). In order that the vertical flow of the questionnaire was not compromised, question items were categorised by topic and response format in each section of the questionnaire. This design ensured that the questions followed a logical flow that allowed the questionnaire to be presented in a logical, vertical format. The background and demographic questions were introduced first and followed by five parts dealing with respectively: educational seminars; website information; written communications; financial counselling; and other education.

With web-based surveys the vertical flow of the questionnaire is governed by screens that appear in front of the respondent. The respondent is directed to each page of the questionnaire by clicking the 'next' button on the bottom of each screen. The vertical flow was enhanced by the use of filter questions that automatically directed respondents to parts of the questionnaire that they were qualified to answer. This allowed respondents to avoid certain sections without any disruption to the flow of the questioning. Response boxes were vertically aligned and rating scales were presented in a vertical aligned grid format. This allowed for a pattern of questioning that was easy to follow and answer, and consistent.

4.5.2.2 Question Content

It has been shown that considerable attention should be given to developing clear, unambiguous and useful questions (De Vaus 2002). In order to achieve this aim the wording of questions is of fundamental importance. An essential component of reliability and validity of survey results depends on how the questions are expressed to the respondents. To be effective survey questions need to possess the following

three attributes: focus, brevity, and simplicity (Alreck & Settle 1985). Accordingly, each question was designed to focus directly on a specific issue or topic, and questions were brief and clear. These issues were addressed during the peer review and pilot testing stages of the research. The language used in the questionnaire was kept simple and familiar and unambiguous terms and double-barrelled and leading questions were avoided.

4.5.2.3 Response Format

Another aspect of question construction is to decide on the response format. The response format deals with how the answers are collected from the respondent. Questions can be formatted as either open-ended (unstructured) or closed-ended (structured). The issue relating to both open-ended and closed-ended questions in survey questionnaires is well documented in the literature (see Sudman & Bradburn 1974; Schuman & Presser 1979; Schuman & Scott 1987; Bradburn, Sudman & Wansink 2004; Weisberg 2005; Fink 2006).

Open-ended Format

With open-ended questions, the respondent is asked to provide their own answer to the question. This type of question is commonly used for in-depth, qualitative interviewing (Babbie 2008). This method of questioning allows the respondent to answer in their own terms rather than picking an answer from a set of provided alternatives. Under this format it is possible to generate unexpected responses, allowing the researcher to gain a better appreciation of the respondent's knowledge in an area as little guidance is provided in the question. This format is also useful when exploring new areas or where the researcher has limited knowledge. Open-ended questions can also be used to gain information so as to generate fixed-choice format questions.

Open-ended questions can present some problems for the researcher, as they require greater effort from respondents when completing the questions. It is, therefore, argued

that open-ended questions have limited utility when used in the context of self-administered questionnaires (De Vaus 2002). Responses are also very difficult to code. The coding process entails reading through answers and then deriving themes that can be used as the basis of coding.

Closed-ended Format

Closed-ended questions ask a question and then list the alternative answers from which the respondent may choose. This approach requires the researcher to develop alternative answers to each question. The participants may be required to provide dichotomous answers such as male/female, or to select from multiple-choice options, or to provide ranking scale response options.

It is argued that experienced researchers prefer the closed-ended approach whenever it is feasible because it has a number of advantages (Alreck & Settle 1985) including that it is easier to code and process answers from closed-ended questions. When these structured items are used, the data are comparable among respondents. Therefore, statistical data can be produced that allow for comparisons and contrasts to be made on the answers provided by various individuals or sub-groups. The set of responses in closed-ended questions may clarify the intended meaning of a question. Furthermore, this question format does not discriminate against the less articulate respondents as it allows questions to be answered without the need to write a response. A problem with closed-ended questioning is that it may result in misleading information if an inefficient range of alternative answers is provided. Another limitation of this format is that it does not allow respondents to add any further information to their answers.

Therefore, the choice of open-ended or closed-ended questions depends on a number of factors such as question content, method of administration, and availability of time. Mail-out surveys are said to require almost exclusive use of closed-ended questions (Hsu & Powers 2001; Bourque & Fielder 2003). Closed-ended questions are said to be popular in survey research because they provide uniform responses that are more easily processed than open-ended questions (Babbie 2008). It is suggested that researchers should avoid the use of open-ended questions in mail questionnaires as

they are difficult to answer, code and analyse (Bourque & Fielder 2003). With this in mind, it was considered appropriate to use closed-ended questions in the questionnaire.

4.5.2.4 Question Format

The way that questions within a questionnaire are framed will influence the level of measurement of a variable and how the data are subsequently analysed. The responses received from the questions will yield data that are at an interval, ordinal, and nominal level. Interval-level variables are ranked-ordered categories that are separated by numerically equal distances. However, it is not always possible to use interval-level variables as information may need to be collected using ordinal-level data where categories can be ranked, but with no meaningful numeric interval between categories. Nominal level variables have categories that cannot be rank ordered. Generally, data that are measured at the interval level allows the use of more powerful statistical techniques in the data analysis.

Rating scales were used in the questionnaire to allow for the measurement of the level of agreement (attitude), evaluation and frequency. Agreement scales ask respondents to indicate the extent to which they agree with a questionnaire item. Evaluation scales require an evaluative rating of each item, and frequency asks for a judgement of how many times something has happened. The process began with a clearly defined construct which guided the subsequent scale development. Once developed, the scales were used to measure respondents' attitudes, evaluation and frequency of use of the superannuation educational information provided to them by the superannuation fund.

Likert scales were chosen as an appropriate rating scale to measure respondents' attitudes to financial education. Likert scales are popular with researchers because of the power and simplicity of the format (Alreck & Settle 1985). These scales are used to measure the extremity, intensity and direction of opinions. The Likert scale was deemed appropriate as it facilitates the quantifiable measurement of an attitude and is often used in multiple-item measures of attitude (Spector 1992). With this type of scale, statements are provided and the respondents are asked to indicate the extent to

which they 'agree' or 'disagree' with the statement. The statements were organised as a set of questions in a grid format. It is common for researchers to use the five-point scale (see Proctor 1995; Bouma & Ling 2004; Babbie, 2008). Kervin (1992) suggests that there is no point in utilising a large number of response categories for intensity scales as respondents have difficulty in distinguishing a position in a scale with more than six or seven ordered category descriptions. On this basis, a five-point scale was used with the extreme alternatives set as 'strongly disagree' and 'strongly agree' and centre neutral positions of 'neither agree/or disagree'.

The Likert scale presents a number of advantages in that it provides a flexible framework where item lines can consist of a few words or longer statements if required. Depending on the characteristics of the population, the item wording can be technical and sophisticated or more simple or rudimentary where respondents are then able to complete the items very quickly and easily. The scale can be constructed relatively quickly and easily and responses can be collected in a standardised format from large samples. However, on the negative side respondents may intentionally or unintentionally provide a dishonest response. They may also answer according to what they feel is expected of them as participants. It can also take a substantial amount of time to analyse the data collected from the participants.

Intensity scales were used to determine the importance placed by respondents on each educational resource that was provided by the superannuation fund. These scales were also used to rate the level of importance respondents placed on web-based educational items provided to them by the superannuation fund. Evaluation scales were used to determine the importance of other educational information resources not provided by the superannuation fund. Frequency scales were used to determine how often respondents accessed each educational resource provided by the superannuation fund. These scales are similar to the Likert scale, but rather than measuring a respondent's strength of agreement to a statement, the frequency scale indicates how often an action has been taken. The use of these scales was limited to four items in the questionnaire. This (four item) question was targeted to those who indicated that they had previously used a component of the superannuation fund provided education. The scale contained four points and included the following rating items: 'rarely',

'sometimes', 'often', and 'very often'. A 'never' category was unnecessary and irrelevant to these respondents.

A multiple-choice format was used to gather background and demographic data. The multiple-choice questions required a single response to each question. Using this approach information was collected on gender, age, education, experience and education in finance and investment and the dollar amount of wealth held within an individual's superannuation fund.

4.5.2.5 Order of Questions

It is suggested that the order in which the questionnaire items are presented can impact on responses (Babbie 2008). It is usual to start with questions that respondents will enjoy answering. These questions should be factual and easy to answer and should set the stage for the kinds of questions that may follow. That is, these questions must be relevant to the stated purpose of the survey. Alreck and Settle (1985) recommend creating questionnaire sections that group items on the following criteria: the items all relate to the same topic; the items contain similar content; the items require the same scaling technique; and grouping by multiple criteria. Alreck and Settle (1985) argue that this approach produces a logical sequence and a high level of time and space economy.

The multiple criteria approach was adopted in this study as a guide to the sequencing of questions and six category sections were developed. The first section was focused on demographic and background information. It is usually recommended that any demographic questions be left until the last section of the questionnaire (Thomas 2004; Bradburn, Sudman & Wansink 2004; Babbie 2008). However, as the demographic and background questions were non-threatening and easy to answer it was considered appropriate to place these in the first section.

The next four sections contained questions on the educational resources provided and sponsored by the superannuation fund (educational seminar, superannuation fund

website, written communications and financial counsellor). In each of the four sections filter questions were used to determine whether or not a particular resource of education was used by the respondent. Both users and non-users were automatically directed to different sections of the questionnaire where they were then directed to answer a series of questions using intensity scales arranged in a grid format. Therefore, each section contained questions that required the same scaling technique and all questions related to the same topic. This structure allowed for one set of instructions and one scale type to serve most of the questioning.

The final section of the questionnaire contained questions in which respondents were asked to rate the importance of other information resources for their superannuation education needs. This section contained four questions with a single set of instructions to guide respondents. The final question asked respondents to indicate the dollar balance they had in their superannuation fund. This question was considered to be the most sensitive and, therefore, it was placed at the end of the questionnaire.

4.5.3 Phase III: Writing the Questionnaire

After careful consideration of all the issues discussed in the previous sections of this chapter, the questionnaire was written in a way so as to gather all the required data in a format that could address the research objectives. The questionnaire was designed and written so that it could be completed in a short period by respondents and so that data could be collected efficiently. It is important that the data are collected in a format that enhances further quantitative analysis. To facilitate this, the survey was initially written on a word processing document and then transferred on to an electronic web-page. The electronic version of the survey can be viewed in Appendix One. As mentioned previously in this chapter, survey monkey software was used to write the electronic questionnaire.

4.5.3.1 The Educational Seminar Questions

This section focused on educational seminars delivered by representatives of the Unisuper superannuation fund. The first question determined whether the respondent had attended a seminar. Those who indicated they attended were then directed to a section where they were given 11 statements relating to the seminar and were asked to indicate the extent to which they agreed or disagreed with each statement. They were also asked to rank the importance of the seminar to their educational needs and to indicate how often they attended these seminars. Those who indicated they did not attend a seminar were directed to another section, provided with nine statements as possible explanations for why they did not attend, and asked to indicate the extent to which they agreed or disagreed with each statement.

4.5.3.2 The Superannuation Fund Sponsored Website Questions

This section focused on the superannuation fund website. The first question determined whether the respondent had accessed the website. Those who indicated that they had accessed the site were directed to a section where they were given 12 statements relating to the website and were asked to indicate the extent to which they agreed or disagreed with each statement. They were also asked to rank the importance of the website to their educational needs and to indicate how often they accessed the website. They were also given a further seven statements on website items and asked to indicate the importance of these items for their educational requirements. Those who indicated that they did not access the website were directed to another section where they were provided with seven statements as possible explanations for why they did not access the site, and asked to indicate the extent to which they agreed or disagreed with each statement.

4.5.3.3 The Written Communications Questions

This section focused on the written communications mailed by the superannuation fund. The first question determined whether the respondent had read these

communications. Those who indicated that they had read them were directed to a section where they were given nine statements relating to the written communications and were asked to indicate the extent to which they agreed or disagreed with each statement. They were also asked to rank the importance of the written communications to their educational requirements and to indicate how often they read these communications. Those who indicated they did not attend a seminar were directed to another section where they were provided with seven statements as possible explanations for why they did not read the communications, and asked to indicate the extent to which they agreed or disagreed with each statement.

4.5.3.4 The Financial Counsellor Questions

This section focused on the financial counselling service sponsored by the superannuation fund. The first question determined whether the respondent had obtained advice from the superannuation-fund-provided counsellor. Those who indicated that they received advice were directed to a section where they were given nine statements relating to the financial counselling and were asked to indicate the extent to which they agreed or disagreed with each statement. They were also asked to rank the importance of the financial counselling to their educational requirements and to indicate how often they accessed a financial counsellor. Those who indicated that they never accessed the financial counsellor were directed to another section where they were provided with ten statements as possible explanations for why they did not access the financial counsellor, and asked to indicate the extent to which they agreed or disagreed with each statement.

4.5.3.5 The Importance of Other Sources of Education Questions

This question provided respondents with five other education resources as follows: newspaper publications; financial magazines; radio/television; personal financial adviser/planner; and friends /colleagues. The respondents were then asked to rate the importance or each of these resources for their superannuation educational requirements.

4.5.3.6 The Demographic (Background) Questions

Most questionnaires include demographic questions. Demographic questions are placed in questionnaires to determine the profile of the respondents and how closely the sample resembles the population. They are also used to divide the sample into sub-groups (age, gender, education, employment area and employment history and education in financial matters) to determine the impact of demographics on responses to the other questions.

The first section of the questionnaire consisted of eight questions which focused mainly on the respondent's characteristics. The first three questions identified the respondent's gender, age and education. These factors had been found in the literature review to have an influence on an individual's superannuation decision making. Questions four and five were used to determine whether the respondent had an employment history or formal educational training in finance, investment analysis, sharemarket investing or financial planning. These questions categorise the respondents into two groups: one group having acquired financial knowledge through education or employment; with a potentially less knowledgeable second group. Question six required respondents to rate their knowledge of financial and investment matters. This question allows an understanding of the self-perceived financial knowledge of the respondents. In question seven, participants were asked to rate their attitude towards investment risk. The final question was included to identify the respondent's area of employment as in the literature review employment was identified as a factor influencing investment superannuation savings. The most sensitive question was included as the last item on the questionnaire. In this question respondents were asked to approximate the most recent dollar balance in their superannuation account. The literature suggests that the amount in an individual's superannuation savings account will influence how active they will be in their superannuation investment decision making. The inclusion of these demographic questions allows for useful cross-sections of the questionnaire to be developed from the various respondent demographic and background categories. This information can be statistically tested to detect any significant relationship between a respondent's answers to a particular question with their demographic characteristics.

4.5.3.7 Pilot Test

Testing the questionnaire (piloting) before the final distribution is an essential precaution in ensuring that questions are addressing the issues they are designed to address. Piloting the questionnaire is therefore an integral part of the survey process. Questionnaires have to be composed and tested, improved and then administered (Oppenheim 2001). The two key tests for a questionnaire are reliability and validity (Brace 2004). In addition, the questionnaire must also be tested to ensure that it contains no errors.

The developed questionnaire was given to selected, knowledgeable staff within the Faculty of Business and Law at Victoria University, Melbourne, Australia with a written brief to evaluate certain aspects of the questionnaire. Some staff were asked to comment on the layout and sequencing of questions, and whether the wording within the questions was appropriate and easily understood. Feedback from this process led to some minor changes in the layout of the questionnaire and the wording of questions, and to the inclusion of four additional questions. These four questions were added to acquire further information as to the level of importance the respondent's placed on each educational resource that they utilised. The questionnaire was also given to staff with strong statistical skills and experience in the social sciences who were asked to determine whether the selected statistical techniques could be conducted from the format in which the data were captured. This test provided confirmation that data collected from the questionnaire would be stored in an appropriate format for relevant statistical testing. After completing this process the survey was transferred into an electronic format and tested to ensure that it flowed in the intended sequence. Several academic colleagues, who were familiar with electronic surveys, assisted by completing the questionnaire. They confirmed that it flowed as intended with no confusion. A few minor navigational instructions were added to perfect the instrument.

The survey was then piloted at one university to a group of academic and non-academic staff resembling the sample. An email was sent on 25 February 2008 with an information sheet inviting recipients to participate in the survey. To encourage feedback a reminder email was sent on 4 March 2008. The electronic version of the

survey was used and the feedback identified that it was working as intended. After careful analysis and some verbal feedback only a few minor changes were made to correct some spelling errors. The structure of the main sections of the survey was otherwise retained in their original format.

4.5.3.8 Administration of the Survey

The administrative methods emloyed to stimulate the response rate are the covering letter accompanying the questionnaire, follow-up efforts, sponsorship, and the statement of confidentiality.

Cover Letter

The email cover letter is a factor that has been found to assist in increasing response rates (Solomon 2001). It is suggested that deployment characteristics such as email invitation are more critical to gaining a higher response rate than the presentation of the questionnaire (Archer 2007). Manfreda and Vehovar (2002) found that almost all potential respondents who accessed the first page of a web-based questionnaire either completed or partially completed the questions. Therefore, getting the respondents to proceed beyond the initial email letter can greatly improve response rates. The literature provides guidance as to what should be included in the cover letter (Dillman 2007; De Vaus 2002). More specifically, Czaja and Blair (2005) suggest that the letter should state the following: the purpose of the survey; the sponsor or collector of the data; who should complete the questionnaire; why a response is important; the importance of the research; an assurance of anonymity and confidentiality; and, when to return the questionnaire.

The first email invitation was sent on 5 April 2008 to the sample population of 6000 with a hyperlink providing direct access to the survey for those who chose to respond to the questionnaire. The email made it clear that responses were only sought from those who belong to the university superannuation defined contribution fund and that recipients should not complete the survey if they had a defined benefit plan or a plan outside the university sector fund. Contact details were included for the researcher and

principal doctoral supervisor as well as the Human Research Ethics Committee Network at the University of Tasmania. A University of Tasmania logo incorporating the names of both the Faculty of Business and School of Accounting and Corporate Governance was attached to the top of the email. The email contained all the necessary ethical information regarding the survey and provided an assurance that responses would be handled in complete confidentiality and that anonymity was assured. It was also stated that ethical approval had been received for the study (refer to Appendix Two for the details of the email invitation and information sheet).

Follow-up Efforts

One of the techniques used to increase response rates is the use of multiple contacts with the potential respondents. Research in survey methods has shown that the most important influence on response rates is the number of attempts made to contact the sample population (Herberlein & Baumgartner 1978: Goyder 1982). This technique is widely recommended and is considered a standard component of the methodology for a survey (Porter 2004). Two meta-analyses studies found that persistence of the contacts was a dominant factor affecting response rates in web surveys (Cook, Heath & Thompson 2000; Manfreda & Vehovar 2002). It is argued that increasing the time that the questionnaire is left open, with two reminders, may also significantly increase response rates (Archer 2007).

Guided by the research a decision was made to send two reminder emails and to allow approximately two weeks between reminders. The first reminder email and information sheet was sent on 11 April 2008. A new web browser (collector) was established and was included in the email. This new web browser allowed for the differentiation of the initial replies from those received after the reminder was sent. This email had an immediate impact and a substantial number of responses were collected in the subsequent two-day period. A third and final email with a final reminder message was sent on 24 April 2008. Once again a new web browser (collector) was established and incorporated into the email in order to differentiate late responders. The email again provided the same instructions and information sheet

and advised that the survey would close on 15 May 2008. Again, a substantial response followed in the subsequent two-day period.

Sponsorship

Research shows that, generally, surveys sponsored by governmental or academic organisations achieve higher response rates than those conducted by commercial businesses (Porter 2004). Meta-analyses indicate that this difference can be in the range of nine to 14 percentage points (Goyder 1982; Fox, Crask & Kim 1988). An official electronic logo from the University of Tasmania was placed on the initial contact email as mentioned previously, the logo identified the University of Tasmania, the Faculty of Business and the School of Accounting and Corporate Governance. It was revealed in the email that the study formed part of a Doctor of Philosophy degree being undertaken at the University of Tasmania.

Statement of Confidentiality and Ethical Considerations

De Vaus (2002) identifies voluntary participation, informed consent, no harm, confidentiality and anonymity, and privacy as five ethical responsibilities towards survey participants. The study was considered minimal risk under the guidelines of the Human Research Ethics Committee (Tasmania) Network. A minimal risk ethics application was approved on 10 January 2008 (refer to Appendix Three for the letter of approval). A risk assessment in the human research ethics application document provided assurance that no ethical issues were present that could potentially lead to discomfort or distress to the respondents and that the questions within the study posed no harm to the respondents.

It is argued that a statement of confidentiality should be included with a survey to encourage truthful responses and increase response rates (Dillman, Singer, Clark, & Treat 1996; Singer, von Thurn, & Miller 1995). Porter (2004, p. 14) suggests that:

> Providing an assurance of confidentiality to the respondent may lower the perceived cost of their response being made public and should also foster a sense of trust…

In the study respondents were electronically mailed an invitation to participate and an explanation of the survey together with a web browser where the questionnaire could be located and completed. An information sheet was prepared and sent with the email. It was emphasised within the information sheet that participation was voluntary and that all individual responses would remain anonymous and that respondents' confidentiality and privacy would be assured. The survey was structured in a way that individual responses could not be identified. All electronic responses went to a central database and no identifiable features were attached to any responses. An offer was also made to answer any questions and both the principal supervisor's and the researcher's contact details were provided. Following De Vaus (2002), it was considered that completion and return of a questionnaire demonstrated informed consent.

4.5.4 Phase IV: Selecting the Sample

One of the tasks in survey research is to identify the research population. The population represents the total units from which the sample is selected. The sample frame is a list of all the units from the population from which the sample is chosen. The sample is a segment of the population chosen for investigation, and is often derived from the sampling frame as it is not always possible or practical to involve the entire population. For a sample to be representative, it must exhibit aggregate characteristics that closely approximate those in the population (Babbie 2008). To obtain a sample for this study the following issues were considered and procedures undertaken: defining the population and sample frame; selecting the sample; determining the sample size; implication of sampling errors and bias; and non-response bias.

4.5.4.1 Defining the Population and Sample Frame

The first research task was the identification of the population. The population that is relevant to this study is all superannuation defined contribution fund members. The sample frame chosen for this study is Unisuper defined contribution fund members. Under the current university-wide industry fund, university staff can belong to a defined benefit superannuation plan or a defined contribution fund plan. They also have the choice to move to other superannuation plans outside the university sector fund. Statistics derived from the university sector superannuation fund reveal that approximately 25 percent of members belong to the defined contribution fund and around 75 percent have a defined benefit plan.

4.5.4.2 Selecting the Sample

Non-probability and probability sampling are the two broad types of sampling methods referred to in the literature. Probability samples are considered more representative when developing sample frames. That is, probability sampling ensures that all the members of a population have an equal chance of being included in the sample (DeVaus 2002). A non-probability sample is defined as "any technique in which samples are selected in some way not suggested by probability theory" (Babbie 2008, p. 203).

In this study a non-probability sampling approach was adopted to meet the requirements of the research. A non-probability sampling approach was adopted as it was impractical to generate a probability sample. To generate a random sample the co-operation of the superannuation fund management is required and several attempts to gain their assistance were not successful. Efforts made to gain the fund manager's co-operation commenced with an initial telephone call to the Chief Executive Officer's (CEO's) office followed by a detailed email explaining the purpose of the research. A telephone conversation with the CEO resulted from the email and a more detailed submission was made on the CEO's recommendation. The submission included the draft survey instrument and a detailed summary of the study together with a supporting reference from the doctoral principal supervisor. After several

weeks the CEO responded by email denying access to the data base of members. As access to the population was denied, and with limited time to establish further contact with another fund, a purposive (judgement) sampling technique which is considered a form of non-probability sampling, was adopted. This method uses judgement in obtaining a representative sample through the inclusion of typical groups in the sample (Kerlinger 1986), and proceeds on the basis of judgement.

The sample was chosen from 26 universities identified in Appendix Four and included a cross-section of university staff. Particular effort was made to ensure that these universities represented various geographical locations across Australia. More specifically, steps were taken to ensure that rural and city-based university campuses were included in the sample: this ensured geographical diversification. The sample was then derived from the 26 chosen universities. Systematically, different departments and faculties within each university were chosen to obtain a mix of academic and non-academic university staff in the sample. Particular effort was made to ensure the profiles of university staff included in the sample were representative. That is, the sample was chosen from academics and non-academics. The non-academics included staff from administration, library services, human resources, information technology, finance and accounting, and building and grounds (Refer to Appendix Four for more detailed information).

4.5.4.3 Sample Size

With non-probability samples no statistical inferences exist by estimating a sample size as it is not possible to determine the probability of any particular participant being selected for the sample (Ritter & Sue 2007). It is suggested that increases in sample size reduce the non-representativeness associated with the use of judgement in generating the sample (Kervin 1992). It is shown that sample sizes beyond 350 produce estimates of population mean and correlation that have less fluctuation and more stability (Kervin 1992). Perry (1995) argues that as a rough rule of thumb, doctoral quantitative research requires at least 350 respondents. Other guidelines that have been suggested for determining a suitable sample size for non-probability samples include samples of somewhere between 30 and 500 (Hill 1998) or 10% of the

parent population (Alreck & Settle 1985). Somekh and Lewin (2005) report that in surveys, the sample should be sufficiently large so that any major sub-groups contain at least 100 cases and minor sub-groups contain between 20 and 50.

It was decided to choose a sample of 6000 university staff to ensure that an adequate sample of accumulation fund members was reached. However, only 25 percent of the 6000 sample would, statistically, belong to the defined contribution fund. Accordingly it was expected that approximately 1500 (25% x 6000) of the sample would belong to the university sector defined contribution fund. That is, one of every four surveys sent would be received by a defined contribution fund member. From a potential sample of 1500 it was considered that a sufficient number of responses would be generated to produce appropriate quantitative analysis.

4.5.4.4 Implications for Sampling Errors and Bias

Sampling errors result from selecting a sample that is not representative of the population as a whole. In a probability sample, it is possible to calculate a sampling error. However, in non-probability sampling statistical means of estimating sampling errors cannot be used. It is said that statistical estimates are valid only for samples where every member of the population has an equal chance of selection (Sapsford 2007). It is argued that if the particulars of the sampling are made clear, then the reader is in a position to make a judgement as to the extent to which the statistics are relevant to the population (Sapsford 2007). This point is further reinforced by Schofield (1996, pp. 99-100) who suggests that:

> In preventing standard errors in circumstances such as this, researchers are in effect saying: O.K, I know I haven't got a random sample and so can't estimate sampling error. But this is the best I could do. It could be the case that it hasn't mattered very much, and thus I have calculated the standard errors and have used them in further tests. My finding has support from the literature and looks useful. It's up to you, dear reader, to decide how much reliance you will place on it. Perhaps you'll think that the result is important and will be able to replicate it without the sampling difficulties which I have had and have reported.

The availability of systematic forms of non-probability sampling, such as purposive sampling, may not meet the statistical requirements of probability sampling, but may nevertheless deliver robust samples (Jensen & Jensen 2002). The purposive sampling method was adopted in this study to produce a judgement sample that is a fair (close) representation of the Unisuper membership within the defined contribution fund. This should be regarded as one limitation of the data where sampling error cannot be strictly (theoretically) calculated from a non-probability sample. Statistical inferences have been drawn from the analysis of the data and conclusions and recommendations follow. However, only tentative generalisations can be made from data collected from such a purposive sample.

4.5.4.5 Non-response Bias

The aim of survey research is to achieve an acceptable number of responses from the chosen sample. This is rarely achieved in either mail or web-based surveys. The problem then arises as to whether or not the responses received are in some way different from those where there was no response. Non-response arises as a result of the sample not being contactable, or simply refusing to take part in the survey (Sapsford 2007): it may also result from unusable questionnaires. Non-response is considered a problematic and important source of survey error (Fowler 2008). The existence of non-response means that it may not be possible to assume that the responses received are representative of the sample. To combat the impact of non-response bias researchers should endeavour to maximise the response rate (Fowler 2008). The techniques used to maximise response rate in this study have been discussed in Section 4.5.3.8.

4.5.5 Phase V: Measurement Issues

A major concern in the development of research methods is to ensure validity and reliability of research data. A vital consideration in survey construction is the level of reliability and validity of the responses that are obtained from the survey. It is said that “reliability and validity are the two main psychometric characteristics of

measuring instruments" (Punch 2005, p. 98). When social researchers construct and evaluate measurements they pay particular attention to validity and reliability. When developing measurement scales there is a need to build reliability and validity analyses into the pilot procedures (De Marrais & Lapan 2004). Therefore, a good measurement technique should be both valid and reliable.

4.5.5.1 Validity

In this study, beyond defining constructs and developing scales, it was also necessary to ensure that the scales used actually measured the concept being considered. A survey is said to be valid only to the point that it measures what it is supposed to measure. Punch (2005) argued that validity means whether the data collected represent what we think they represent and the responses really measure the variables that we think they measure. According to the Standards for Educational Standards and Psychological Testing (The American Psychological Association 1985, p. 9), validity is "the most important consideration in test evaluation", and that validity deals with the meaning of inferences drawn from test scores. Wright and Stone (1999, p. 167) state that these "…standards emphasise that it is inferences that are validated and not the test". However, validation is seen as a difficult exercise when developing measurement scales. Spector (1992, p. 46) describes the validation process as follows:

> Validation of a scale is like the testing of a theory, in that its appropriateness cannot be proven. Instead, evidence is collected to either support or refute validity. When a sufficient amount of data supporting validity is amassed, the scale is (tentatively) declared to be construct valid.

Internal validity refers to a characteristic of a study's design. Writers on measurement of internal validity usually distinguish between four different types, namely, face validity, content validity, construct validity, and criterion-related validity (see Babbie 2008; Kervin 1992). It is suggested that confusion may surround the meaning of validity as each type differs in meaning and method (Wright & Stone 1999). These four types of validity are also described as not "…entirely satisfactory but…the best we have" (De Vaus 2002, p. 53). With these validation concerns in mind, careful

efforts were taken, which are addressed in the next sections, to maximise the validity of the questionnaire. The different types of validity and how these validity concerns were addressed are now outlined in the context of this study.

Face Validity

A measure is said to have face validity if it appears that it is going to measure what it is supposed to measure. Face validity can be established by asking relevant others whether they believe the measures used in the test seem to cover the concept that is the focus of the study. Bryman (2004, p. 73) describes face validity as an "…essentially intuitive process". It is therefore suggested that it is a subjective validity measure as it only concerns whether a scale or index makes sense to an outside observer (Yang & Miller 2007). In this study the questionnaire was provided to a panel of colleagues who were asked to indicate whether or not they believed the concept was captured in the items of the questionnaire. These colleagues had previous experience in both designing and completing questionnaires in the social sciences. They were also members of the superannuation fund which was the subject of the investigation and were, therefore, familiar with the aspects of education provided by the superannuation fund. Their feedback confirmed face validity of the instrument**.**

Content Validity

Content validity refers to the degree to which the sample of test items represents the content that the test is designed to measure (Abrami, Cholmsky & Gordon 2001). That is, do the measures used in the test adequately cover the defined construct of the study. Therefore, content validity will ultimately depend on how we have defined the concept that it is designed to test (De Vaus 2002). The concept was defined in the literature review in Chapter Three and test items were developed to measure the relevant aspects of superannuation fund sponsored financial education. The approach of distributing the survey questions to colleagues that were members of the superannuation fund was also aimed at confirming content validity. The sample of superannuation fund members was authoritatively placed to assess whether the

constructs, as defined, were captured in the questionnaire. Content validation was also reviewed during the pilot testing of the questionnaire (see section 4.5.3.7). Feedback from these validation procedures instigated only minor modifications to the questionnaire.

Construct Validity

Construct validity is concerned with the capacity of the measure to work well within the theoretical demands of the researcher's model (Sirkin 1995). Consequently, the establishment of construct validity is said to be theory-driven (Yang & Miller, 2007). Carmines and Zeller (1979, p. 23) suggested the following three steps in order to establish construct validity: (1) specify the theoretical relationship between the measured concepts; (2) examine the empirical relationships between the measures of concepts; and (3) interpret the empirical evidence and demonstrate the extent to which the theoretical relationship between the concepts is demonstrated by the measures. These procedures are documented in Chapter Three where the theoretical concepts were developed and their theoretical relationships established. For example, a comprehensive OECD definition of financial education was adopted for the purpose of this study (see Section 3.5). The forms of education that impact on an investor's decision-making were also identified in Chapter Three. Measurement scales were then developed to answer the research questions developed in the literature review chapter.

Criterion-related Validity

Criterion validity refers to validating the measuring instrument against some form of external criterion (Gliner & Morgan 2000). Criterion-related validity can be either predictive or concurrent. Predictive validity is determined by the degree to which a particular instrument can predict a future outcome. This requires not only homogeneous groups for both studies, but also a substantial lapse in time so as to repeat the test. Concurrent validity is determined by how closely an instrument compares with a similar measure when completed simultaneously. Therefore, the key

to criterion validity is being able to find outside criteria that are measurable (Gliner & Morgan 2000).

In the social sciences, criterion validation may create difficulties in situations where no well established criteria exist to validate the new measures (De Vaus 2002; Babbie 2008). Further, criterion-related validity may not be applicable to all measurement procedures in the social sciences, as not every abstract concept has an appropriate criterion for assessing a measurement of it (Carmines & Zeller, 1979). As a new measurement was used in this study, with no existing validated measurement, other forms of validity were relied upon to establish the instrument.

External Validity

External validity refers to the extent to which the results of the research are generalisable (Campbell & Stanley 1966). In this study, a purposive sampling method (judgement sample) was adopted. The details relating to the selection of the sample are contained in Section 4.5.4.2. Judgement drawn from knowledge of the university sector was used to select the sample to be studied as this was the only practical way to draw a sample. While it is not strictly possible to generalise from this sample to all superannuation defined contribution fund members, it is likely that similar results would be obtained from future similar studies within the superannuation industry.

4.5.5.2 Reliability

It was also critical that the measures adopted were reliable. Reliability is said to be of particular importance when collecting data or using a survey instrument to gather data (McMurray et al. 2004). If the measures are reliable we can depend on them. Kerlinger (1986, p. 405) suggests the definition of reliability can be epitomised by the question: "If we measure the same set of objects again and again with the same or comparable measuring instrument, will we get the same or similar results?". If we do, our questions provide data with high reliability. Oppenheim (2001, p. 159) also comments that "reliability means consistency". Therefore, ideally, survey questions

will produce consistent responses. However, this will depend, in part, on whether the questions can be answered consistently and straightforwardly, using the response scales provided (Punch 2005). De Vaus (2002, p. 96) also warns that "ambiguous or vague question wording may produce unreliable responses as respondents read the question differently on different occasions".

In contrast, reliability refers to problems in the accuracy of the measurement instrument, whereas validity refers to the appropriateness of the measurement instrument (Bouma & Ling 2004). A number of authors describe the difference between reliability and validity using a bulls-eye target analogy (see Alreck & Settle 1985; Kerlinger 1986). These authors suggest that high validity means that questions elicit responses that are close to or hit the bulls-eye, whereas reliable responses are clustered in the same target area. Therefore, for responses to be both reliable and valid they should all be clustered in close proximity of the bulls-eye. That is, the bulls-eye represents the construct being measured and clustered responses signify a high level of consistency in responses. It is, however, worth noting that a reliable measurement is not necessarily a valid measurement: but, adequate reliability is a precondition to validity (Oppenheim 2001).

The use of multiple questionnaire items to measure a single concept is a common practice in the social sciences. Using multiple items to increase the internal reliability of measurement is of particular importance when the concepts are difficult to measure (Langbein & Felbinger 2006). The key to internal reliability is whether or not the indicators that make up the scale are consistent. That is, do respondent's scores on any one indicator match closely to their scores on the other indicators? The stronger the association is among the individual items and the more items there are that are included, the higher the reliability index.

Cronbach's alpha (Cronbach 1951) is the most commonly used type of coefficient for establishing internal consistency reliability (see Sansone, Morf & Panter 2004); Schutt, 2006; Leech, Barrett & Morgan. 2005). The Cronbach alpha is normally used where several Likert-type items are summed to make a composite score. It is calculated by correlating each item in the scale against every other item in the scale. The Cronbach alpha is widely used, because it provides a measure of reliability that

can be obtained from a single administration of a questionnaire (Leech, Barrett & Morgan 2005). The value of Cronbach's alpha ranges between 0 and 1.0. The higher the figure the more reliable is the scale. Some writers suggest that a Cronbach alpha value of 0.80 or higher is a good indicator of reliability (Ruane 2004; Bryman & Bell 2007). Others have employed an alpha of 0.70 as a rule of thumb to indicate internal reliability (DeVellis 2003; Nunally 1978; De Vaus 2002). Easterby-Smith, Thorpe and Lowe (2002) claimed that for exploratory research reliability coefficients in the order of 0.60 are acceptable. This identifies a variation in opinion on what researchers believe is the most desirable alpha value to indicate internal reliability. The reliability analysis scale (Cronbach Alpha) for data in the questionnaire is summarised in Chapter Five, Section 5.3.

4.5.6 Phase VI: Determining the Results

When survey questionnaires are completed and returned, preparing them for analysis is the next step. The mail-out survey usually needs to be pre-coded and the data manually transferred on to a database. A web-based survey eliminates the need to code a questionnaire, as it allows for immediate data collection into a database, thus avoiding transcription errors and data processing time (Wright, 2005; Phelps, Fisher, & Ellis 2007; Jansen, Spink & Taksa 2008). In this study all the results were returned electronically to a database for immediate access. The data were numerically coded and transferred on to an Excel spreadsheet where a number was assigned to each response. As an example, single digit numbers were used for the rating scale responses as follows: The number '1' was assigned to 'strongly disagree' and the number five to 'strongly agree' all the responses in between these two points were coded '2' for 'disagree, '3' for 'neither agree or disagree' and '4' for 'agree'. This coding procedure was applied for all response formats throughout the questionnaire. The analysis of the data is discussed in the next chapter.

4.6 Summary

In this chapter the research approach adopted in this study has been explained. The chapter commenced with a review of the major objective of the project which is to evaluate a financial education model to determine whether it provides superannuation defined contribution fund members with the required educational resources to assist them in making informed investment decisions regarding their superannuation funds. In developing the research method, consideration was given to the main superannuation fund provided educational resources that are available to members in the Unisuper fund.

Next, relevant research paradigms were reviewed so as to develop a theoretical position for the research. The common approaches to research methodology in the literature were then analysed. On the basis of this analysis the survey approach was deemed the most appropriate research method to be used in this study. The strengths and weaknesses of the survey method were discussed. After careful consideration of the sample and its geographical dispersion a decision was made to adopt a web-based questionnaire to collect data.

The chapter was then divided into six major sub-sections in each of which a discussion was conducted of different steps in the administration of the research method. The phases were as follows: (1) selecting the type of survey; (2) constructing the questionnaire; (3) writing the questionnaire; (4) selecting the sample; (5) measurement issues; and, (6) approach to be taken in determining the results. Within each step careful consideration was given to a number of issues such as questionnaire layout, question content, question format, pilot testing, response rate, sample size, and the validity and reliability of measures used in the questionnaire.

In the next chapter the data analysis used in this study and the statistical techniques and tests that are used to answer the research questions are presented.

Chapter Five
Quantitative Data Analysis I: Descriptive Statistics

5.1 Introduction

Quantitative analysis may be used at a number of levels. Baxter, Hughes and Tight (2006) prescribe four levels of analysis that include descriptive statistics, inferential statistics, simple inter-relationships and multivariate analysis. Descriptive statistics and simple inter-relationships are discussed in this chapter and further discussion on inferential statistics occurs in the next chapter. The use of multivariate analysis is not necessary or relevant in this study in order to address the research questions.

Descriptive statistics have a number of uses that include describing the characteristics of the sample and the basic features of the data in the study; and addressing specific research questions. Descriptive statistics provide simple summaries about the sample and the measures, and form the basis of virtually every quantitative analysis of data (Trochim 2006). Three forms of analysis are usually adopted in univariate descriptive data analysis which includes frequency measure; measures of central tendency, and measures of dispersion (Bryman 2004). These measures are employed in this study to analyse the data and to further address the research questions. How the data were prepared for analysis is discussed in the next section and this is followed by the calculation of the response rate.

5.2 Preparing Data for Analysis

In section 4.5.6 of the previous chapter the need to prepare the returned questionnaires for data analysis was discussed. With mail-out surveys the process usually requires the researcher to pre-code items on the questionnaire. When questionnaires are completed and returned the coded data need to be transferred on to a database. This process can lead to transcription errors which can be avoided using a web-based survey. With web-based surveys results are returned electronically to a database. The

data are automatically numerically coded according to response categories and transferred on to an Excel spreadsheet, thus avoiding transcription errors. The spreadsheet can then be up-loaded into the SPSS statistical analysis package to generate the statistical data that are to be analysed.

5.3 Response Rate and Reliability Analysis of Measurement Scales

When a social science survey is conducted, it is normally expected that some people who form part of the sample will refuse to participate. Seale (2004) reports on the need for every survey report to contain a clear statement of the sample size, the number that proved to be out-of-scope and the number that responded. From this information it is then possible to elicit a response rate for the survey. The response rate is defined as the number of persons who respond to the survey divided by the number of eligible respondents (Fink 2003). To determine the eligible sample there is a need to subtract those persons who were ineligible to complete the survey and those who were unreachable. The response rate for this study is calculated in Table 5.1.

Table 5.1 Response Rate Calculation

Sample size	6000
Unreachable	596
Ineligible* [(6000 - 596) x (1 - 0.25]	4053
Number of respondents	406
Response rate	406/[6000 – (596 + 4053)] x 100 = 30.1%

* Only 25 percent of those who received the survey are likely to belong to the defined contribution fund and therefore be eligible to respond to the survey.

As indicated in Table 5.1, from the initial sample of 6000, a total of 4649 was either unreachable or ineligible to respond. The response rate of 30.1 percent is described as an approximation as it incorporates an estimation of the level of ineligibility within the sample. It is determined that 4053 of the reachable sample are ineligible to participate in the survey, as they are likely to belong to the defined benefit plan. The 596 unreachable portion of the sample represents those individuals that could not be contacted for reasons such as an invalid email address or absence due to factors such

as being on long-term leave. The response rate of 30.1 percent compares favourably to results obtained in some other web-based surveys where reported response rates varied between seven and 44 percent (Schonlau, Fricker & Elliot 2001).

The reliability analysis scale (Cronbach alpha) for the data in the questionnaire is summarised and the reliability coefficient values are provided in Table 5.2. The coefficient values relate to the scales used for the four major educational resources covered in the survey. These are: educational seminars; superannuation fund website; superannuation fund written communications; and superannuation fund provided financial counselling. The results shown in the table indicate good reliability scores for all the relevant measurement scales.

Table 5.2 The Reliability Analysis Scale (Cronbach alpha)

Superannuation Fund Provided Education	Coefficient Alpha Values
Educational Seminar Presentation (5 items)	0.862
Educational Seminar Usefulness (6 items)	0.885
Superannuation Fund Website (13 items)	0.909
Superannuation Fund Written Communications (7 items)	0.836
Superannuation Fund Financial Counsellor Communications (4 items)	0.885
Superannuation Fund Financial Counsellor Information (5 items)	0.935

Question 21, items seven and eight were deleted from the measurement scale relating to the superannuation fund written communications. These items were deleted because they proved to be unreliable measures. Deleting these items from the measurement scale resulted in an increase in the reliability coefficient from 0.790 to 0.836. In addition, corrected item-total correlations were also calculated between each item and the sum (or mean) of all other items combined. This can be considered a form of item reliability where the researcher looks for items that have a corrected item-total correlation of 0.40 or higher (Leong & Austin 2005). In this study all scale items in Table 5.2 had a corrected item-total correlation of greater than 0.50, indicating item reliability.

5.4 Analysis of Frequency: Respondent Background and Demographics

A frequency distribution shows the number of observations falling into each of several categories for a variable. Frequency distributions can be presented in a number of formats including tables, bar charts, and pie charts. Frequency tables provide the number of respondents belonging to each response category for the variable in the question. The Table will usually show the actual number in each category and the relative percentage falling into each category. De Vaus (2002, p. 212) explains that a "core part of univariate analysis is describing the distribution of variables". Given that all variables contain more than one category we can examine the way responses are distributed across these categories. Leech, Barrett and Morgan (2005, p. 12) suggest that "frequency distributions are critical to understanding our use of measurement terms". The following sections will examine frequency data in relation to respondents' background and demographics. There will also be further examination of frequency data relating to the questions on the educational seminar, superannuation fund website, superannuation fund written communications, superannuation fund provided financial counsellor, and the importance of other sources of superannuation information. All the tables in this chapter were developed from the research.

5.4.1 Respondents' Characteristics

As shown in Table 5.3, 46.7 percent of the respondents were male and 53.3 percent female. The respondent gender characteristics are consistent with the Department of Education, Employment and Workplace Relations (2007) Higher Education Statistics Report, where the reported gender proportions in higher education is 47.2 percent male and 52.8 percent female.

Table 5.3 Gender

Gender	Frequency	Percent	Cumulative Percent
Male	185	46.7	46.7
Female	211	53.3	100.0
Total	396	100.0	

The age group of respondents is shown in Table 5.4. The largest number of respondents was in the 50-59 age bracket representing 32.4 percent of total responses; the lowest responding group was in the 18-29 age bracket. It can also be noted that 58.1 percent of respondents are younger than 50. A majority of respondents is aged between 40-59, and represent 60.4 percent of total respondents. The respondent age demographics are also consistent with the university sector profile reported in the Department of Education, Employment and Workplace Relations (2007) Higher Education Statistics which identifies a similar distribution in age to the brackets reflected by the respondents to this study.

Table 5.4 Age

Age	Frequency	Percent	Cumulative Percent
18-29	30	7.5	7.5
30-39	90	22.6	30.1
40-49	111	28.0	58.1
50-59	129	32.4	90.5
60+	38	9.5	100.0
Total	398	100.0	

The respondents' qualification levels are presented in Table 5.5. It can be seen that 48.4 percent of respondents have a doctoral qualification and that a large majority (86.6 percent) of respondents has qualifications at or above the undergraduate level. A relatively small number of respondents have no qualification (4.8 percent). It was expected that a large percentage of respondents would hold a doctoral qualification as indicated in the Department of Education, Employment and Workplace Relations (2007) Higher Education Statistics which shows that 62.3 percent of academic staff hold a doctorate. It is also not surprising that a large majority of respondents is at least educated to tertiary level, as a significant percentage of respondents are academics and this level of qualification is consistent with academic appointments.

Table 5.5 Level of Qualification

Qualification	Frequency	Percent	Cumulative Percent
Other	2	0.5	0.5
No Qualification	19	4.8	5.3
Post Secondary	32	8.1	13.4
Undergraduate	53	13.3	26.7
Postgraduate	99	24.9	51.6
Doctorate	192	48.4	100.0
Total	397	100.0	

Table 5.6 reveals that a large majority of respondents (74.2 percent) has no employment history in investment or finance related areas. A minority (25.8 percent) of respondents indicated that they had job related experience in either finance or investment. It is likely that the minority are academics in commerce or business faculties and possibly some employees that are employed by the university in an accounting or finance related role.

Table 5.6 Employed in a Job Related to Finance, Investment Analysis, Share Market Investing or Financial Planning

Employment Experience in Investment/Finance Related Areas	Frequency	Percent	Cumulative Percent
Yes	101	25.8	25.8
No	290	74.2	100.0
Total	391	100.0	

Table 5.7 shows that 74.6 percent of respondents have no formal educational training in investment or finance. A minority of respondents indicated that they had some formal education in investment or finance. This was an expected outcome as it is unlikely that a significant percentage of university staff would have any formal training in investment or finance.

Table 5.7 Formal Educational Training in Finance, Investment, Sharemarket Investing or Financial Planning

Training in Investment/Finance Related Areas	Frequency	Percent	Cumulative Percent
Yes	101	25.4	25.4
No	296	74.6	100.0
Total	397	100	

Table 5.8 summarises the knowledge of respondents in regards to finance or investment matters. A majority (56.5 percent) of respondents indicated that they had either moderate or substantial knowledge in these matters. The other 43.5 percent of respondents believe that they have either little or no knowledge in regards to finance and investment matters. These findings are similar to the Kerry, Clayton and Olynyk (2007) study that found 49 percent of superannuation fund members surveyed when attending an educational seminar rated themselves as having no or weak, investment knowledge whereas 51 percent rated themselves as having moderate or strong knowledge.

Even though, as shown in Tables 5.6 and 5.7, most respondents had no work experience or formal training in finance or investment, a majority of them believe that they have moderate or substantial knowledge in these matters. This indicates clearly that many respondents have acquired this knowledge through some form of the educative process. Where these respondents acquired their knowledge is subject to further investigation in this chapter.

Table 5.8 Knowledge in Finance and Investment Matters

Knowledge in Investment and Finance Matters	Frequency	Percent	Cumulative Percent
No Knowledge	18	4.6	4.6
Little Knowledge	152	38.9	43.5
Moderate Knowledge	177	45.2	88.7
Substantial Knowledge	44	11.3	100.0
Total	391	100	

Table 5.9 reports respondents' attitudes towards investment risk. While the majority (52.7 percent) of respondents has a conservative or moderately conservative attitude; 29.6 percent held either a moderately aggressive or aggressive attitude towards investment risk. These findings are consistent with the Kerry, Clayton and Olynyk (2007) study that found a majority (65 percent) of university superannuation fund members, surveyed when attending an educational seminar, rated their attitude to investment risk as conservative and a minority (35 percent) considered it to be aggressive.

Table 5.9 Attitude Towards Investment Risk

Attitude Towards Investment Risk	Frequency	Percent	Cumulative Percent
Conservative	60	15.2	15.2
Moderately Conservative	148	37.5	52.7
Neutral	70	17.7	70.4
Moderately Aggressive	109	27.6	98.0
Aggressive	8	2.0	100.0
Total	395	100	

Respondents' employment area is presented in Table 5.10. It shows that a majority of respondents (69.2 percent) work as academics. The remaining respondents work in services areas such as administration, library services, human resources, information technology, building and grounds, and accounting and finance. This response characteristic is notable given that there are more non-academics than academics in the higher education sector. However, the number of responses from non-academics is still large (30.8 percent). In further analysis, Table 5.10 is collapsed into two categories: academic and non-academic respondents.

Table 5.10 Area of Employment

Area of Employment	Frequency	Percent	Cumulative Percent
Academic	273	69.2	69.2
Administration	49	12.4	81.6
Library Services	15	3.8	85.4
Human Resources	14	3.6	89.0
Information Technology	10	2.5	91.5
Building and Grounds	1	0.3	91.8
Finance and Accounting	18	4.6	96.4
Other	14	3.6	100.0
Total	394	100.0	

Table 5.11 reports the respondent's most recent dollar balance in their superannuation account. The highest frequency occurred in the lowest balance category representing 30.2 percent of all responses. A majority of respondents (57.6 percent) had a balance of $250,000 or less in their account, whilst 3.9 percent of respondents indicated that they had more than $1,000,000 as a superannuation account balance. A total of 5.4 percent of respondents did not know their superannuation account balance. It is possible that these respondents are reluctant to indicate their dollar balance, and are merely completing this section of the survey in order to proceed to the next section. Overall, there is a decreasing number of responses in each of the account balance categories. This indicates that comparatively there are many more superannuation account balances in the lower amount than the higher amount of the response categories.

Table 5.11 Dollar Balance in Superannuation Account

Balance in Superannuation Account	Frequency	Percent	Cumulative Percent
Less than $100,000	107	30.2	30.2
Between $100,000 - $250,000	97	27.4	57.6
Between $250,001- $500,000	70	19.8	77.4
Between $501,000 - $1,000,000	47	13.3	90.7
Between $1,000,001 - $2,000,000	10	2.8	93.5
More than $2,000,000	4	1.1	94.6
Do not know	19	5.4	100.0
Total	354	100.0	

5.5 Analysis of Frequency, Central Tendency and Variation of Sources of Financial Education

Frequency data are used to evaluate the distribution of responses to the questions relating to the superannuation fund provided financial education and other sources of educational information. In addition to the frequency data, measures of central tendency and variation are used to analyse the data further. There are three common measures of central tendency; the mean, the mode and the median. The mode and the median are used much less in research than the mean (Punch 2005). The mean is calculated by adding all the scores together for cases within the data distribution and then dividing by the number of cases. It is suggested that because the mean is widely understood and used, it is preferable for use when describing what the average is for a scale variable (Connolly 2007).

The standard deviation is described as the most common measure of variability (Punch 2005). Standard deviation measures the deviation of the individual scores from their mean. A measure of variation that is small indicates that the mean accurately represents the population from which the data were collected (Somekh & Lewin 2005). The standard deviation and mean are often reported together because the standard deviation is an indication of how adequate the mean is as a summary statistic for a set of data (Mertens 2005). Therefore, interpreting the standard deviation together with the mean provides an understanding of the level of dispersion within the scores of a distribution. If the distribution is normal or 'bell shaped', we know that:

- about 68 percent of all cases fall within one standard deviation either side of the mean;
- about 95 percent of all cases fall within two standard deviations either side of the mean; and,
- about 99 percent of all cases fall within three standard deviations either side of the mean.

Importantly, these figures will not vary significantly, even when the distribution is not bell shaped (Punch 2005). The following analysis incorporates frequency data, the

mean, and where appropriate, the standard deviation to aid in the analysis and interpretation of the data.

5.5.1 Educational Seminar

Question 9 in the questionnaire was a filter question that required respondents to indicate whether or not they had ever attended a superannuation related educational seminar. Those who indicated that they had attended were automatically directed to question 10, and those indicating that they had not were directed to question 13. Table 5.12 shows that 43.6 percent of respondents had previously attended an educational seminar whereas 56.4 percent had never attended one. Therefore, more than half of the respondents have never attended an educational seminar. This finding is consistent with Clark-Murphy and Gerrans (2001) who found that when Australian university superannuation fund members were confronted with an option to change from a defined benefit plan to a defined contribution plan, 47 percent of respondents used seminars to assist when making their decision. The reasons why respondents did not attend any seminars are investigated in section 5.5.1.3.

Table 5.12 Attendance at an Educational Seminar

Attended Educational Seminar	Frequency	Percent	Cumulative Percent
Yes	177	43.6	43.6
No	229	56.4	100.0
Total	406	100.0	

5.5.1.2 Usefulness of the Educational Seminar

Table 5.13 presents the results relating to the experiences of those respondents who attended an educational seminar. The questions they answered related both to instruction and the information presented. The first five items show that a substantial majority of respondents either agreed or strongly agreed with the statements that the seminars were well presented and provided relevant and understandable feedback. Items six, seven and nine reveal that for a majority of respondents their expectations for information were met on a particular topic. Item ten showed that a similar number of respondents either agreed (31.9 percent) or disagreed (35 percent) on the issue that the seminars provide a basis for continual information. This may be indicating that the respondents view the seminar as an occasional information resource rather than a continuing one.

The rating scores for each item scale were combined to provide a summated score from which a rating average was derived. The summated mean for statement items one through to five totalled 19.4 with a standard deviation of 3.37. The average rating for these statement items is 3.88 with a standard deviation of 0.674. The overall mean was calculated by dividing the summated means by the number of statement items. The overall mean rating of 3.88 indicates that respondents have a positive perception of the presentation of information in educational seminars. The standard deviation of 0.674 indicates low variation of individual responses from the overall mean. The summated mean for statement items six through to eleven was 20.1 with a standard deviation of 4.36. The overall mean rating for these statement items is 3.36 with a standard deviation of 0.726. The overall mean shows that users generally feel they are being informed by attending educational seminars. The standard deviation indicates low variation in individual responses. These findings are consistent with Kim, Bagwell and Garman (1998) who found that group or seminar training was positively received by participants.

Table 5.13 Instruction and Information Usefulness of the Educational Seminar

Educational Seminar Statements		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{x}$
Item	Question 10	N	%	N	%	N	%	N	%	N	%	N	%	
1	The seminar was well presented	1	0.6	4	2.4	16	9.6	122	73.5	23	13.9	166	100.0	3.98
2	I was able to easily follow the material covered in the seminar	1	0.6	8	4.8	19	11.3	107	64.1	32	19.2	167	100.0	3.96
3	The participants were encouraged to ask specific questions	4	2.4	12	7.2	30	18.1	86	51.8	34	20.5	166	100.0	3.81
4	The presenters provided relevant feedback on the specific questions they were asked	3	1.8	8	4.8	30	17.9	100	59.9	26	15.6	167	100.0	3.83
5	The presenters provided understandable feedback on the specific questions asked	3	1.8	6	3.6	30	17.9	103	61.7	25	15.0	167	100.0	3.84
6	The issues covered in the seminar were consistent with my expectations	2	1.2	11	6.6	32	19.1	103	61.7	19	11.4	167	100.0	3.75
7	The seminar adequately covered all the necessary superannuation issues for me to gain greater information on that particular topic	7	4.2	26	15.5	38	22.8	86	51.5	10	6	167	100.0	3.40
8	As a result of attending the seminar I am now able to make an informed decision on the specific superannuation issues addressed	4	2.4	27	16.3	57	34.3	75	45.2	3	1.8	166	100.0	3.28
9	Attending the seminar has provided me with a better understanding of the superannuation system	2	1.2	14	8.5	42	25.4	95	57.6	12	7.3	165	100.0	3.61

Table 5.13 Instruction and Information Usefulness of the Educational Seminar (Continued)

10	The seminar keeps me continually informed on changes in superannuation matters that impact on my investment decision making	14	8.6	43	26.4	54	33.1	47	28.8	5	3.1	163	100.0	2.91
11	Overall I believe that attending seminars has adequately met my educational investment decision making	7	4.3	32	19.5	48	29.3	72	43.9	5	3.0	164	100.0	3.22
Overall Mean (items 1-5) Presentation of information at seminars														**3.88**
Overall Standard Deviation (items 1-5)														**0.674**
Overall Mean (items 6-11) Informed by seminars														**3.36**
Overall Standard Deviation (items 6-11)														**0.726**

In Table 5.14 it can be seen that of those respondents who attended the seminar, a substantial majority (77 percent) rated it as either important or very important in regard to their superannuation decision making. A mean rating score of 3.81 reflects the importance respondents placed on the educational seminar in keeping them informed on superannuation issues for their decision making. This indicates strong support for the importance placed by users on educational seminars in the superannuation decision making process. In the current study 24.2 percent rated the seminar as very important. This finding is consistent with Clark-Murphy and Gerrans (2001) where 27 percent of respondents ranked the seminar as the most important source of information used to make their decision as to whether to change from the defined benefit plan to the defined contribution plan. Respondents in the current study were not asked to rank the seminar against other superannuation fund educational resources.

Table 5.14 The Importance Placed on the Educational Seminar for Superannuation Decision Making

Importance Placed on the Educational Seminar	**Frequency**	**Percent**	**Cumulative Percent**
No Importance	3	1.9	1.9
Very Little Importance	26	16.1	18.0
No Opinion	8	5.0	23.0
Moderately Important	85	52.8	75.8
Very Important	39	24.2	100.0
Total	161	100.0	
Mean			**3.81**

Respondents who indicated that they had attended an educational seminar were also asked to indicate how often they attended educational seminars. Table 5.15 indicates that 82.6 percent of respondents accessed the educational seminar either rarely or sometimes. These results are reflected in the low mean rating score of 1.88. This result may be due to the specific nature of the topics presented in the seminar. Many respondents may only access the seminar where the seminar topic is of specific interest to their decision making. Another explanation for this result may be that due to the limited number of seminars offered to superannuation fund members throughout the year they simply have no opportunity to attend.

Table 5.15 How Often are the Educational Seminars Accessed?

How Often are Educational Seminars Accessed?	**Frequency**	**Percent**	**Cumulative Percent**
Rarely	56	34.8	34.8
Sometimes	77	47.8	82.6
Often	20	12.4	95.0
Very Often	8	5.0	100.0
Total	161	100.0	
Mean			**1.88**

5.5.1.3 Reasons for the Failure to Attend Educational Seminars

Question 13 was confined to those respondents who indicated in the filter question that they had never attended an educational seminar. Table 5.16 outlines statements as to why respondents may fail to attend educational seminars. A majority of respondents (61.1 percent) did not agree with statement one that they had no awareness of the seminar program as a reason for not attending. Therefore, the data support the notion that there is considerable awareness amongst the respondents of the program offered by the superannuation fund. A large percentage of respondents (46.5 percent) did not agree with statement two that they perceived no benefit from attending the seminar: thus many respondents appreciate that there is a benefit from attending the seminar. A majority of respondents (51.9 percent) disagreed with the third statement that there is no relevance in the seminar topics to their investment decision making. A substantial number of respondents (47.7 percent) did not agree with statement four that they failed to attend because they already possess the required knowledge. A slight majority of respondents (50.9 percent) also disagreed with statement six that they fail to attend because of a lack of interest. The results support the argument that many respondents have an interest in the seminar topics and also see some relevance and benefit from attending the seminars.

Statements eight, nine, seven and five (respectively) provide the most important reasons why respondents fail to attend seminars. A strong majority (67.4 percent) of respondents agree with statement (eight) that they are busy and do not have the time to attend. A majority (50.5 percent) agreed with statement nine that they obtain their information from other sources; and many more respondents agreed (46.5 percent) than disagreed (25.6 percent) with statement seven that they fail to attend because they can utilise their time on more important issues. More respondents agreed (41 percent) than disagreed (36.4 percent) with statement five that they are not motivated enough to attend the seminars. In summary, statement item eight being busy and not having time to attend, produced the most agreement with a mean rating of 3.74. This was followed by statement item nine obtaining information requirements from other sources, with a mean rating of 3.35, and then statement item seven utilising time on more important issues, with a mean rating of 3.27.

Table 5.16 Reasons Respondents Fail to Attend Educational Seminars

Educational Seminar Statements – Reasons Respondents Fail to Attend		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{x}$
Item	Question 13	N	%	N	%	N	%	N	%	N	%	N	%	
1	I had no awareness of the seminar program	45	20.8	87	40.3	19	8.8	38	17.6	27	12.5	216	100.0	2.61
2	I perceive no benefit from attending the seminar program	17	7.9	83	38.6	68	31.7	39	18.1	8	3.7	215	100.0	2.71
3	I perceive no relevance of the seminar topic to my superannuation decision making	17	7.9	95	44.0	58	26.8	40	18.5	6	2.8	216	100.0	2.64
4	I feel I already have the required knowledge to make informed superannuation decisions	24	11.1	79	36.6	49	22.6	55	25.5	9	4.2	216	100.0	2.75
5	I am not motivated enough to attend the seminars	15	6.9	64	29.5	49	22.6	64	29.5	25	11.5	217	100.0	3.09
6	I do not attend because of a lack of interest	27	12.5	83	38.4	52	24.1	41	19.0	13	6.0	216	100.0	2.68
7	I can utilise my time on more important issues	7	3.3	48	22.3	60	27.9	80	37.2	20	9.3	215	100.0	3.27
8	I am busy and do not have the time to attend	7	3.2	22	10.1	42	19.3	96	44.0	51	23.4	218	100.0	3.74
9	I obtain my information requirements from other sources	9	4.1	38	17.4	61	28	88	40.4	22	10.1	218	100.0	3.35

5.5.2 Superannuation Fund Website

Question 14 was a filter question that asked respondents to indicate whether they have accessed the superannuation fund sponsored website. Those who indicated that they had accessed the website were automatically directed to questions 15, 16 and 17, and those responding that they had not were directed to question 18. Table 5.17 reveals that 61.5 percent of respondents had accessed the superannuation fund provided website and 38.5 percent had not. This finding is inconsistent with Clark-Murphy and Gerrans (2001) who found that when Australian university superannuation fund members were confronted with an option to change from a defined benefit plan to a defined contribution plan, only 32 percent of members indicated that they used the website in making their decision. Given that a significant time has elapsed (eight years) since the Murphy and Gerrans (2001) study, more superannuation members may now have embraced the website for their information requirements. This may indicate a changing pattern in member usage of the superannuation provided website or, it may simply suggest that defined contribution fund members surveyed in this study make more use of the website than members of the defined benefit plan.

Table 5.17 Previous Access to the Superannuation Fund Website

	Frequency	Percent
Yes	243	61.5
No	152	38.5
Total	395	100.0

5.5.2.1 Usefulness of Superannuation Fund Website Information

This section was only answered by those respondents who indicated that they had previously accessed the superannuation website (Question 15). Table 5.18 presents the responses to the usefulness of educational information in the superannuation fund website. A majority of respondents agreed with items one and three that the website adequately informs them on what they require in savings to fund retirement, and the adequacy of their current level of savings to meet this objective. In item two 40.4 percent of respondents agreed that the website assists them to make informed decisions in respect of their retirement plan. Item four indicated that a majority of respondents (51.6 percent) agreed that the website informed them on the impact of their investment choices on their future superannuation savings. In items five and six many more respondents agreed (41.6 and 33.1 percent) than disagreed (12.4 and 19.2 percent) that the website investment calculators provided useful information for both the choice of investments and an investment plan. A majority of respondents agreed with statement items seven, eight and nine (57.6, 69.8 and 50.7 percent) that the website informs them on issues relating to both their investment choice risk and return, and how their superannuation contributions are taxed.

More respondents agreed (41.2 and 39.8 percent) than disagreed (15.8 and 17.7 percent) with statement items ten and eleven that the website assisted them in understanding the tax issues affecting their superannuation account. A large number of respondents (46.8 percent) agreed with item twelve that the website assists them in understanding the impact of salary sacrificing. More respondents agreed (47.3 percent) than disagreed (17.1 percent) that, overall the website adequately meets their investment decision making requirements. The summated means for all 13 items is 43.6 with a standard deviation (SD) of 8.28. The overall mean rating for the 13 statement items is 3.35 with a SD of 0.636. The overall mean item rating indicates that the respondents generally felt they were informed by the range of sponsor web-based educational information. The SD (0.636) indicates that a substantial number of the responses are positioned closely to the overall mean. This provides new evidence about the usefulness of the website as an educational resource in informing defined contribution fund members on superannuation related matters, and therefore assisting them to make appropriate investment decisions.

Table 5.18 Information Usefulness in the Superannuation Fund Website

Superannuation Fund Website Statements		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{x}$
Item	Question 15	N	%	N	%	N	%	N	%	N	%	N	%	
1	The website informs me as to what I require in savings to adequately fund my retirement	7	3.1	23	10.3	79	35.3	106	47.3	9	4.0	224	100.0	3.39
2	The website allows me to make informed decisions when it comes to preparing an investment plan to meet my superannuation savings goal	5	2.2	32	14.2	97	43.2	84	37.3	7	3.1	225	100.0	3.25
3	The website allows me to make an informed assessment as to the adequacy of my current savings levels to meet my superannuation needs	6	2.7	23	10.2	91	40.4	97	43.1	8	3.6	225	100.0	3.35
4	The website informs me on how my investment choices will impact on my future superannuation savings	4	1.8	29	12.9	76	33.7	107	47.6	9	4	225	100.0	3.39
5	The web-based investment calculator provides me with the information I require to determine which investment choice will best meet my superannuation savings need	3	1.3	25	11.1	104	46	81	35.8	13	5.8	226	100.0	3.34
6	The web-based investment calculator provided me with the information I required to develop a superannuation investment plan	5	2.2	38	17	107	47.7	66	29.5	8	3.6	224	100.0	3.15
7	The website informs me on the concept of risk and how it applies to each investment choice offered by the fund	6	2.7	24	10.7	65	29.0	120	53.6	9	4.0	224	100.0	3.46
8	The website informs me on the potential returns produced by each investment choice offered by the fund	4	1.8	15	6.8	48	21.6	133	59.9	22	9.9	222	100.0	3.69

Table 5.18 Information Usefulness in the Superannuation Fund Website (Continued)

9	The website informs me on how my superannuation contributions are taxed	6	2.7	26	11.8	77	34.8	97	43.9	15	6.8	221	100.0	3.40
10	The website assists me to understand how my investment returns from my superannuation fund are taxed	6	2.7	29	13.1	95	43.0	82	37.1	9	4.1	221	100.0	3.27
11	The website assists me to understand how my superannuation savings will be taxed when I decide to retire	9	4.1	30	13.6	94	42.5	78	35.3	10	4.5	221	100.0	3.23
12	The website assists me to understand the impact of salary sacrificing on my superannuation savings	10	4.5	24	10.9	83	37.8	88	40.0	15	6.8	220	100.0	3.34
13	Overall I found that the range of available educational information on this website adequately meets my investment decision making requirements	6	2.7	32	14.4	79	35.6	93	41.9	12	5.4	222	100.0	3.33
Overall Mean (items 1-13) Informed by Superannuation Fund Website														**3.35**
Overall Standard Deviation (items 1-13)														**0.636**

Question 16 was only answered by those respondents who indicated that they had previously accessed the superannuation fund website. When respondents were questioned on the importance of the superannuation fund website for their superannuation information requirements 74.3 percent indicated that it was either moderately important or very important (see Table 5.19) with a mean response of 3.79. This result is important as it shows that a substantial number of respondents rely on the website for their superannuation educational needs. Only a small percentage (17 percent) thought that it was either of no importance or was not very important. This finding closely relates to how respondents rated the importance of the educational seminar for superannuation decision making, where 77 percent rated it as either important or very important. Clark-Murphy and Gerrans (2001) found that only 3.5 percent of respondents indicated that the website was the most important resource used in their decision as to whether or not to change from the defined benefit plan to a defined contribution plan. In the current study, 24.3 percent of respondents who accessed the website indicated that it is very important in their superannuation decision making. The difference may be due to the Clark-Murphy and Gerrans (2001) study reviewing all members based on a single issue (whether to remain in the defined benefit plan or move to a defined contribution plan).

Table 5.19 The Importance Placed on the Superannuation Fund Website for Superannuation Decision Making

Importance Placed on the Superannuation Fund Website for Decision Making	Frequency	Percent	Cumulative Percent
No Importance	5	2.3	2.3
Not Very Important	32	14.7	17.0
No Opinion	19	8.7	25.7
Moderately Important	109	50.0	75.7
Very Important	53	24.3	100.0
Total	218	100.0	
Mean			**3.79**

Question 17 was only answered by those respondents who indicated that they had previously accessed the superannuation fund website. Table 5.20 shows that 70.2 percent of respondents access the website only rarely or sometimes. This result is reflected in the low mean rating of 2.03. As with the educational seminar, respondents appear to perceive that regular attendance or access may not be necessary in obtaining the required information to make an informed decision on superannuation issues. However, 29.8 percent of the respondents did access the website either often or very often. This indicates that almost one-third of respondents will regularly use the website for their superannuation information requirements. This finding raises the question why do they need to access the website so often? Regular access may be for monitoring purposes which may be part of an aggressive investment approach. Those accessing less often may be adopting a more conservative approach to their investment decision making and may perceive the need to access the website only occasionally for their information requirements.

Table 5.20 How Often is the Superannuation Fund Website Accessed?

How Often is the Superannuation Fund Website Accessed?	**Frequency**	**Percent**	**Cumulative Percent**
Rarely	70	32.1	32.1
Sometimes	83	38.1	70.2
Often	53	24.3	94.5
Very Often	12	5.5	100.0
Total	218	100.0	
Mean			**2.03**

5.5.2.2 Importance Placed on Superannuation Fund Website Information

The respondents who had previously accessed the website were asked to indicate the importance that they placed on selected web-based items in respect of financial education requirements for informed decision making. The results in Table 5.21 show that respondents place considerable importance on items one, two and three with over 80 percent rating these items as either moderately important or very important. The mean responses to these first three statements were 4.27, 4.22 and 4.18 further indicating the strength of this response. The website items relate to the return performance of the investment options offered by the fund; the characteristics of each of the investment options in relation to potential returns; and the potential risks associated with investing in each of those options. This is a significant finding as it indicates how important some website information is in informing superannuation fund members about the characteristics of the available investment choices.

A large majority (70.1 percent and 69.8 percent) of respondents also placed considerable importance on items four and seven. These items relate to information on recent news items on superannuation related issues, and on having access to financial investment calculators. Smaller numbers, although still a majority of investors, ranked items five, six and eight as important. These items related to accessing information on the website in relation to personal financial planning advice, the availability of seminars, and superannuation fund generated publications. It is notable that a majority of respondents rated all the listed website items as important to their decision making. This has important implications for the future educational content of superannuation fund provided websites as these findings indicate that members place considerable importance on the return performance and risks attached to the investment options offered by the fund, along with investment calculators. Therefore, this type of information should feature prominently in superannuation fund websites.

Table 5.21 Importance of Superannuation Fund Website Information

Importance of Superannuation Fund Website Information		No Importance		Not Very Important		No Opinion		Moderately Important		Very Important		Frequency		Mean $\bar{x}$
Item	Question 18	N	%	N	%	N	%	N	%	N	%	N	%	
1	Information on the return performance of the individual investment choices/options offered by the fund	1	0.5	8	3.7	18	8.3	93	43.3	95	44.2	215	100.0	4.27
2	Information on the characteristics of each investment option in relation to potential returns	2	0.9	7	3.3	22	10.2	95	44.2	89	41.4	215	100.0	4.22
3	Information on the characteristics of each investment option in relation to potential risks	2	0.9	8	3.7	27	12.6	91	42.3	87	40.5	215	100.0	4.18
4	Recent news items on superannuation related issues	3	1.4	24	11.2	37	17.3	100	46.7	50	23.4	214	100.0	3.79
5	Details on how to access personal financial planning advice	12	5.6	31	14.5	56	26.1	81	37.9	34	15.9	214	100.0	3.44
6	Information on the content and availability of educational seminars	7	3.3	39	18.1	55	25.5	90	41.9	24	11.2	215	100.0	3.40
7	Access to financial calculators	4	1.9	15	7.1	45	21.2	81	38.2	67	31.6	212	100.0	3.91
8	Access to superannuation generated publications such as the annual report of the superannuation fund, newsletters and other educational publications	6	2.8	36	16.8	53	24.8	95	44.4	24	11.2	214	100.0	3.44

5.5.2.3 Failure to Access Superannuation Fund Website

This section was confined to those respondents who indicated in the filter question that they had never accessed the superannuation fund provided website. Table 5.22 contains information on reasons respondents may not access the superannuation fund website. There were only two items where a majority of respondents agreed as to the reasons why they failed to access the website: in items seven and eight they indicated they were too busy and did not have time, and that they obtained their information from other sources. A lack of motivation was a reason that also received more agreement (40.8 percent) than disagreement (32 percent). Of particular interest is that a substantial majority (83.6 percent) did not agree that they lacked the necessary skills to use the website, as this indicates a perception amongst the respondents that they possess the necessary computer skills to navigate a website. Furthermore a majority of respondents (53.7 percent) disagreed with the statement that they do not like using the website for their information requirements. Statements such as 'I perceive no benefit from accessing the website' and 'I perceive no relevance of the information on the website to my decision making' received little agreement (27 and 22.4 percent).

It was interesting that 33.1 percent of respondents agreed that they had no awareness of the website. This is a surprising result as the written communications from the superannuation fund provide details of both the existence of the website and how to gain access. There should also be a general expectation from members that such a superannuation fund website would exist given that almost all large businesses and organisations develop one. The reasons that received most agreement why respondents do not access the website are as follows: not having time; obtaining information from other sources; lack of motivation; and a lack of interest. This is generally consistent with the reasons provided by respondents for not attending the educational seminars where a lack of time; obtaining information from other sources; and a lack of motivation received the most support.

Table 5.22 Reasons Respondents Fail to Access the Superannuation Fund Website

Superannuation Fund Website Statements – Reasons Respondents Fail to Access		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{x}$
Item	Question 19	N	%	N	%	N	%	N	%	N	%	N	%	
1	I have no awareness of the existence of a website	20	13.5	60	40.5	19	12.9	34	23.0	15	10.1	148	100.0	2.76
2	I perceive no benefit from accessing the website	9	6.1	60	40.5	39	26.4	37	25.0	3	2.0	148	100.0	2.76
3	I perceive no relevance of the information on the website to my superannuation decision making	9	6.1	63	42.9	42	28.6	30	20.4	3	2.0	147	100.0	2.69
4	I feel I already have the required knowledge to make informed superannuation investment decisions	12	8.2	72	49.3	22	15.1	34	23.3	6	4.1	146	100.0	2.66
5	Lack of motivation	9	6.1	38	25.9	40	27.2	46	31.3	14	9.5	147	100.0	3.12
6	Lack of interest	9	6.2	47	32.4	36	24.8	43	29.7	10	6.9	145	100.0	2.99
7	I am busy and do not have the time to visit the website	4	2.7	18	12.2	31	21.2	66	44.9	28	19.0	147	100.0	3.65
8	I obtain my information from other sources	6	4.1	22	15.0	44	29.9	67	45.6	8	5.4	147	100.0	3.33
9	I do not like using the website for my information requirements	24	16.3	55	37.4	45	30.7	18	12.2	5	3.4	147	100.0	2.49
10	I do not have the necessary skills to use the website	74	50.3	49	33.3	18	12.3	5	3.4	1	0.7	147	100.0	1.71

5.5.3 Superannuation Fund Written Communications

Question 20 was a filter question that asked respondents to indicate whether they have read the written communications mailed to them by the superannuation fund. Those who indicated that they have read the communications were automatically directed to questions 21, 22 and 23, and those responding that they had not were directed to question 24. Table 5.23 indicates that 69.5 percent of respondents read the communications whilst 30.5 did not. Therefore, of all the educational options available to respondents, the written communications were the most highly utilised. These findings confirm a more extensive use of written communications when compared to the other information resources provided by the superannuation fund. The results obtained in this study confirm findings in the Clark-Murphy and Gerrans (2001) study, where a substantial majority (87.8 percent) of respondents indicated that they used the information pack, mailed by the university superannuation fund to its members, to make their decision as to whether to change from the defined benefit plan to a defined contribution plan. Also relevant in that study was that respondents ranked these written communications as the most important information resource when it came to making their decision.

Table 5.23 Read the Superannuation Fund Provided Written Communications

	Frequency	**Percent**
Yes	257	69.5
No	113	30.5
Total	370	100.0

5.5.3.1 The Importance of Superannuation Fund Provided Written Communications

Question 21 was only answered by those respondents who indicated that they read the superannuation written communications. Table 5.24 reports on the importance placed by respondents on written communications. Table 5.24 indicates that a majority of respondents agreed with most statement items. In particular, the information that informs superannuation fund members on the risks and returns of investment choices detailed in statement items one, two and three received substantial support as important matters in decision making. This is consistent with the outcomes from the website information where similar results were obtained for these items (section 5.5.2.1). Respondents showed little agreement on item four (32.4 percent): this suggests that the written communications do not inform well on the suitability of current contributions in meeting adequate retirement savings levels. Many more respondents agreed (47.4 percent) than disagreed (27.3 percent) with item five that the written communications assist in making an informed choice in selecting appropriate investment options. A slight majority (50.2 percent) of respondents agreed that the written communications inform them on the educational and information services offered by the superannuation fund. The majority of respondents (54.2 percent) also agreed with statement seven that, overall, the written communications have informed them in respect of their superannuation investment decision making.

The summated mean for statement items one through to seven is 24.22 with a standard deviation of 4.55. The overall mean rating for these statement items is 3.46 with a standard deviation of 0.650. An overall mean item rating of 3.46 indicates that the respondents generally felt they were informed by the range of information in the superannuation fund provided written communications. The standard deviation (0.650) shows low variability of individual responses from the overall mean.

Table 5.24 Importance of Superannuation Fund Written Communications

Importance of Superannuation Fund Written Communications		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{x}$
Item	Question 21	N	%	N	%	N	%	N	%	N	%	N	%	
1	The written communication informs me on the investment risks attached to the investment options offered by the superannuation fund	4	1.6	26	10.4	47	18.8	144	57.6	29	11.6	250	100.0	3.67
2	The written communication informs me on the investment returns generated by the investment options offered by the superannuation fund	3	1.2	12	4.8	18	7.2	158	63.2	59	23.6	250	100.0	4.03
3	The written communication informs me on recent developments in superannuation and the implications for my superannuation savings	4	1.6	22	8.8	49	19.6	143	57.2	32	12.8	250	100.0	3.71
4	The written communication informs me on the suitability of my current contributions to meeting my retirement savings	16	6.4	84	33.6	69	27.6	72	28.8	9	3.6	250	100.0	2.90
5	The written communication assists me in making an informed choice in selecting appropriate investment options to meet my current requirements	8	3.2	60	24.1	63	25.3	103	41.4	15	6	249	100.0	3.23
6	The written communication informs me on the education and information services offered by the superannuation fund.	7	2.8	50	19.9	68	27.1	112	44.6	14	5.6	251	100.0	3.30
7	Overall I found the range of available information in these written communications have informed my superannuation investment decision making	6	2.4	34	13.7	74	29.7	121	48.6	14	5.6	249	100.0	3.41
Overall Mean (items 1-7) Informed by Written Communications														**3.46**
Overall Standard Deviation (items 1-7)														**0.650**

Those respondents who indicated that they read the superannuation fund mailed written communications were then asked to rate the importance of this educational resource. A substantial majority (84.4 percent) of respondents rated them as important. As shown in Table 5.25, no respondents considered these written communications to be of no importance. These results present a clear indication of the importance placed by respondents on the written communications. These findings are consistent with the results obtained in respect of the educational seminar (Table 5.14) and superannuation website (Table 5.19), where a large majority of respondents indicated the importance of these items to their information requirements. Based on this evidence, it can be assumed that written communications, educational seminars and the superannuation website represent important media for conveying investment decision making information to superannuation fund members.

Table 5.25 The Importance Placed on Written Communications for Superannuation Decision Making

Importance Placed on Written Communications for Decision Making	Frequency	Percent	Cumulative Percent
No Importance	0	0.0	0.0
Not Very Important	26	10.7	10.7
No Opinion	12	4.9	15.6
Moderately Important	149	61.3	76.9
Very Important	56	23.1	100.0
Total	243	100.0	
Mean			**3.97**

Question 23 was only answered by those respondents who indicated that they read the superannuation written communications. Table 5.26 presents the results on how often the respondents read superannuation written communications. It was found that 62 percent read them often or very often. Only a very small percentage (2.9) read them rarely and 35.1 percent read them sometimes. This indicates that a majority of respondents will often refer to these documents for their superannuation information requirements. These results are in stark contrast with the results obtained for the seminars (Table 5.15) and website (Table 5.20) where respondents indicated much less frequent use of these educational tools: only 17.4 percent of respondents indicated that they often utilised the seminars (Table 5.15), and 29.8 percent indicated that they often accessed the website (Table 5.20). It is an important finding that respondents rate the written communications relatively more importantly and utilise them more frequently than the educational seminar and superannuation website.

Table 5.26 How Often are the Written Communications Read?

How Often are Written Communications Read?	Frequency	Percent	Cumulative Percent
Rarely	7	2.9	2.9
Sometimes	85	35.1	38.0
Often	111	45.9	83.9
Very Often	39	16.1	100.0
Total	242	100.0	
Mean			**2.75**

5.5.3.2 Reasons for the Failure to Read Superannuation Fund Written Communications

Those respondents who indicated that they did not read the written communications were given a set of statements outlining a number of possible reasons explaining why they do not read these communications (see Table 5.27). The majority of respondents agreed with question 24 items two, three, four, five and six. Most respondents (72.9 percent) agreed with item five that they were not motivated to read the written communications. Other statement items where considerable agreement was noted were item three that the written material takes too long to read (69.1 percent), and item two the length of the material provided (61.6 percent). Majority agreement (51.8 percent) was noted for item four where respondents perceived little relevance in the material provided. Substantial agreement was provided for item six that suggested respondents lacked interest in the written material (45.8 percent). The statements that received the least amount of agreement were items one and seven: where 36.9 percent of respondents agreed with statement item one that the material provided was too difficult to understand. This implies that the information presented in the written communications is not generally perceived as difficult to understand. Less agreement (34.2 percent) was given for statement item seven that respondents obtained their information from other sources.

This result is in contrast with the findings on educational seminars (section 5.5.1.3), where a majority of respondents agreed that they did not attend seminars because they obtained their information from other sources. To summarise, the main reasons for respondents not reading the written communications were due to a lack of motivation; perceiving it would take too long to read the material; the length of the material; and a perception of a lack of relevance to decision making. Lack of motivation and time constraints appear to be consistent themes as to why respondents fail to read written communications, attend seminars (section 5.5.1.3), or access the superannuation fund website (section 5.5.2.3).

Table 5.27 Reasons Respondents Fail to Read Superannuation Fund Provided Written Communications

Superannuation Fund Written Communication Statements – Reasons Respondents Fail to Read		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{X}$
Item	Question 24	N	%	N	%	N	%	N	%	N	%	N	%	
1	I find the material is difficult to understand	5	4.5	23	20.7	42	37.9	30	27.0	11	9.9	111	100.0	3.17
2	The material provided is too lengthy	1	0.9	5	4.5	37	33.0	45	40.2	24	21.4	112	100.0	3.77
3	It takes too long to read through the material provided	1	0.9	6	5.5	27	24.5	52	47.3	24	21.8	110	100.0	3.84
4	I perceive little relevance of the material provided to my superannuation decision making	2	1.8	15	13.4	37	33.0	46	41.1	12	10.7	112	100.0	3.46
5	I am not motivated to read through the material provided	2	1.8	4	3.6	24	21.7	54	48.6	27	24.3	111	100.0	3.90
6	I am not interested in the material provided	0	0.0	24	22.0	35	32.2	36	33.0	14	12.8	109	100.0	3.37
7	I obtain my information from other sources	5	4.5	20	18.0	48	43.3	27	24.3	11	9.9	111	100.0	3.17

5.5.4 Superannuation Fund Provided Financial Counsellor

Question 25 was a filter question that asked respondents to indicate whether they have obtained financial advice from the superannuation fund provided financial counsellor. Those who indicated that they received financial counselling were automatically directed to questions 26, 27 and 28, and those responding they had not were directed to question 29. Table 5.28 indicates that 19.9 percent of respondents obtained financial advice from a counsellor whilst 80.1 percent did not. Therefore, of all the educational options available to respondents, the superannuation fund provided financial counselling service was the least utilised. These results are consistent with findings in the Clark-Murphy and Gerrans (2001) study, where it was found that only 11.3 percent of respondents belonging to the Australian university superannuation fund used the financial counsellor when deciding on whether to change from their defined benefit fund to a defined contribution fund.

Table 5.28 Used the Superannuation Fund Provided Financial Counsellor

Used the Superannuation Fund Provided Financial Counsellor	Frequency	Percent
Yes	73	19.9
No	294	80.1
Total	367	100.0

5.5.4.1 Usefulness of the Financial Counsellor

The respondents who indicated that they had received financial advice from the superannuation fund provided financial counsellor were provided with a number of statements explaining the importance of this educational tool. Specifically, the statements seek to determine the respondents' perception of communications with the financial counsellor and the extent to which any advice contributed to more informed decision making. Table 5.29 provides a summary of the responses to these statements. In statement items one through four a large majority of respondents agreed that: the financial counsellor was a good communicator; the advice was clear and understandable; the counsellor appeared knowledgeable; and, they had confidence in the advice they received. Therefore, the responses provided substantial support as to the quality of communication provided by the financial counsellor. A large majority of respondents also agreed that the counsellor was able to provide adequate advice on the superannuation issue (item five). They also agreed that during the counselling period they had sufficient time and were encouraged to ask questions, and that they were able to make informed decisions after completing the counselling session (items six, seven and eight). A total of 71.2 percent of respondents agreed that overall the financial counselling contributed to them making an informed superannuation investment decision (item nine).

The summated mean for statement items one through four is 15.64 with a standard deviation of 2.77. The overall mean rating for these statement items is 3.91 with a standard deviation of 0.692. An overall mean rating of 3.91 indicates that the users have a strong positive perception of the quality of the communication of information provided by the financial counsellor. The standard deviation (0.692) shows low variability of individual responses from the overall mean (3.91). The summated mean for statements five through nine is 19.1 with a standard deviation of 4.13. The overall mean rating for these statement items is 3.82 with a standard deviation of 0.826. For those respondents who did use the financial counselling, the high rating indicates that they felt they were informed by accessing the financial counsellor. The standard deviation (0.826) shows overall low variability in individual responses from the overall mean, but higher overall deviation when compared to the response variation to statement items one through four.

Table 5.29 Importance of Superannuation Fund Provided Financial Counselling

Importance of Superannuation Fund Financial Counselling		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{x}$
Item	Question 26	N	%	N	%	N	%	N	%	N	%	N	%	
1	The financial counsellor was a good communicator	1	1.4	4	5.6	7	9.6	47	65.3	13	18.1	72	100.0	3.93
2	The counselling advice was clear and understandable	1	1.4	3	4.2	11	15.2	45	62.5	12	16.7	72	100.0	3.89
3	The counsellor appeared to be knowledgeable	0	0.0	2	2.8	10	13.9	42	58.3	18	25.0	72	100.0	4.06
4	I had confidence in the advice I received from the financial counsellor	1	1.4	6	8.3	17	23.7	33	45.8	15	20.8	72	100.0	3.76
5	The counsellor was able to provide me with adequate advice on the issues that I referred to them	4	5.6	5	6.9	12	16.6	38	52.8	13	18.1	72	100.0	3.71
6	I felt I had sufficient time with the counsellor	1	1.4	5	6.9	11	15.3	43	59.7	12	16.7	72	100.0	3.83
7	I felt encouraged to ask questions during the counselling session	1	1.4	1	1.4	9	12.3	45	61.6	17	23.3	73	100.0	4.04
8	I was able to make informed decisions on the superannuation issues I referred to the financial counsellor	2	2.7	6	8.2	13	17.9	39	53.4	13	17.8	73	100.0	3.75
9	Overall I found financial counselling contributed to me making an informed superannuation investment decision	4	5.5	4	5.5	13	17.8	35	47.9	17	23.3	73	100.0	3.78
Overall Mean (items 1-4) Communication with Financial Counsellor														**3.91**
Overall Standard Deviation (items 1-4)														**0.692**
Overall Mean (items 5-9) Informed by Financial Counsellor														**3.82**
Standard Deviation (items 5-9)														**0.826**

The respondents that used a financial counsellor were asked to rate the importance of the superannuation fund provided financial counsellor. Table 5.30 shows that a large majority, 80.3 percent of respondents, indicated that they found the counselling service either moderately important or very important. What was significant was that 43.7 percent of respondents rated the counselling as very important. Only 4.2 percent of respondents found no importance in the financial counselling and 8.5 percent found it not very important. These results are consistent with what was found in the respondent rating for the educational seminar, superannuation fund website, and superannuation fund provided written communications. With all educational information resources examined, a majority of respondents found them to be either moderately or very important.

Table 5.30 The Importance Placed on Financial Counselling for Superannuation Decision Making

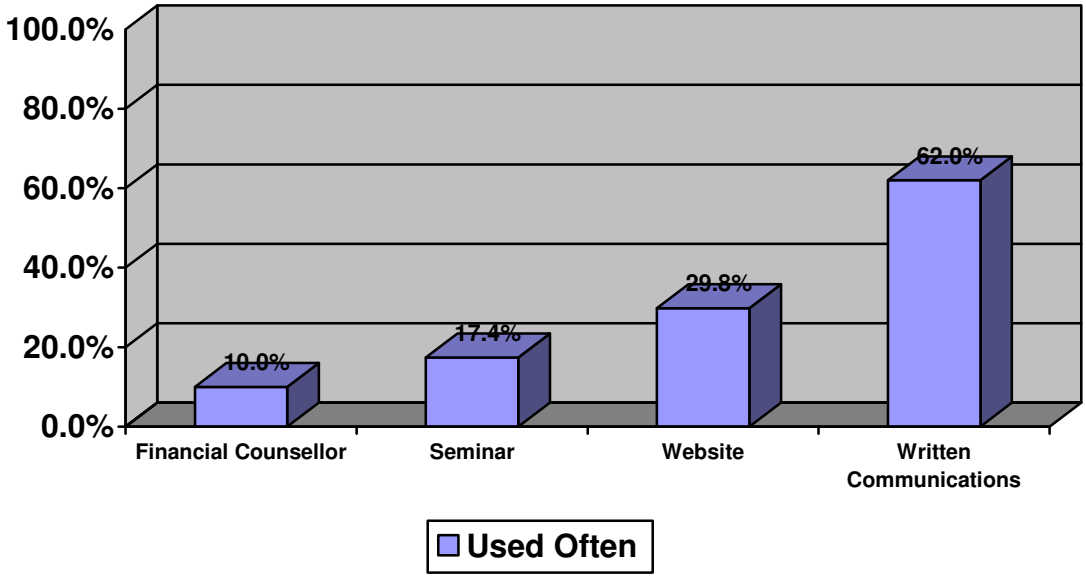
The Importance Placed on Financial Counselling for Decision Making	**Frequency**	**Percent**	**Cumulative Percent**
No Importance	3	4.2	4.2
Not Very Important	6	8.5	12.7
No Opinion	5	7.0	19.7
Moderately Important	26	36.6	56.3
Very Important	31	43.7	100.0
Total	71	100.0	
Mean			**4.07**

The next question was answered only by those respondents who indicated that they used a superannuation fund provided financial counsellor. Table 5.31 presents the results on the question of how often the respondents access superannuation fund provided financial counselling. It was found that 54.3 percent rarely use this service and 35.7 percent used it sometimes. Only 10 percent used the financial counselling often or very often. This indicates that a majority of respondents either rarely or only sometimes use the financial counselling for their superannuation information requirements. These results are consistent with the results obtained for the seminars and website where respondents indicated a low frequency of use of these educational tools. However, the financial counselling service was the least used tool in terms of both numbers of users and frequency of use (10 percent). By comparison 17.4 percent of respondents indicated that they often utilised the educational seminars, 29.8 percent indicated that they often accessed the website, and 62 percent indicated they often read the written communications (see Diagram 5.1). The low frequency of use of the financial counselling service may be explained by the nature of the service: it may be that it is used infrequently only, as a service to obtain educational information not available or suitable from the other available sources.

Table 5.31 Frequency of Use of Financial Counselling

Frequency of Use of Financial Counselling	Frequency	Percent	Cumulative Percent
Rarely	38	54.3	54.3
Sometimes	25	35.7	90.0
Often	6	8.6	98.6
Very Often	1	1.4	100.0
Total	70	100.0	
Mean			**1.57**

Diagram 5.1 A Comparison of the Frequency of Use of Educational Information Resources



5.5.4.2 Reasons for the Failure to Use Superannuation Fund Provided Financial Counselling

Those respondents who indicated that they had not accessed the superannuation fund provided financial counselling were given a set of statements outlining a number of reasons as to why they did not use the service. They were asked to indicate the extent to which they agreed or disagreed with each statement. Table 5.32 summarises the responses to these statements. Majority agreement was provided for statement ten, where 54.8 percent of respondents agreed that they obtained their information from other sources. Similarly, items three, five and nine generated more agreement than disagreement from the respondents. These statements showed that: many respondents did not view it necessary to use the counselling; the other information provided was sufficient for decision making; and they were busy and did not have time to speak to a financial counsellor. Being busy and not having time are reasons that have consistently received strong agreement as a reason for failing to utilise an educational information resource (see sections 5.5.1.3; 5.5.2.3; and 5.5.3.2). There is also

evidence within the research findings that respondents generally agree that the use of other information resources is an important reason for their failure to utilise specific superannuation provided information (see sections 5.5.1.3 and 5.5.2.3). A majority of respondents disagreed with statement items one, two, four, seven and eight. This indicates that most respondents believe that they are aware of the counselling service, and that they do not hold the belief that there is no benefit from using a financial counsellor. Furthermore, a majority of respondents indicated they would not feel uncomfortable speaking to a financial counsellor. They also indicated that they did not lack confidence in the financial counselling service. Further, a lack of interest and motivation were not reasons why a majority of respondents did not use the counselling service.

Table 5.32 Reasons Respondents Fail to use the Superannuation Fund Provided Financial Counselling

Superannuation Fund Financial Counselling Statements – Reasons Respondents Fail to use		Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly Agree		Frequency		Mean $\bar{x}$
Item	Question 29	N	%	N	%	N	%	N	%	N	%	N	%	
1	I have no awareness of the financial counselling service	33	11.6	112	39.4	43	15.2	75	26.4	21	7.4	284	100.0	2.79
2	I perceive no benefit from using a financial counsellor	35	12.5	109	38.8	78	27.7	45	16.0	14	5.0	281	100.0	2.62
3	I do not feel it necessary to use the financial counselling service for my superannuation decisions	22	7.8	88	31.3	51	18.2	101	35.9	19	6.8	281	100.0	3.02
4	I do not feel comfortable speaking to a financial counsellor about my financial superannuation issues	58	20.6	138	49.1	54	19.3	22	7.8	9	3.2	281	100.0	2.24
5	I found that the other information provided was sufficient for me to make all my superannuation investment decisions	16	5.7	62	22.1	81	29.0	104	37.1	17	6.1	280	100.0	3.16
6	I do not use the financial counselling service because of a lack of motivation	31	11.2	100	36.0	65	23.3	72	25.9	10	3.6	278	100.0	2.75
7	I do not use the financial counselling service because of a lack of interest	33	12	117	42.5	61	22.2	53	19.3	11	4.0	275	100.0	2.61
8	I do not use because of a lack of confidence in the financial counselling service	47	16.8	104	37.1	77	27.5	31	11.1	21	7.5	280	100.0	2.55
9	I am busy and do not have the time to speak to a financial counsellor	19	6.8	54	19.3	78	27.8	96	34.3	33	11.8	280	100.0	3.25
10	I obtain my information from other sources	10	3.6	41	14.7	75	26.9	122	43.7	31	11.1	279	100.0	3.44

5.5.5 Other Sources of Superannuation Fund Educational Information

All respondents were provided with five other possible sources for their superannuation information requirements. These are as follows: newspaper publication; financial magazine, radio and television, personal financial adviser or planner, and friends and colleagues. The respondents were asked to rate, on a five-point scale, the importance of each source to their superannuation educational needs.

5.5.5.1 Newspaper Publications

Table 5.33 identifies the importance respondents placed on newspaper publications for their superannuation educational needs. It shows that a majority of respondents (58.8 percent) rated this information as either moderately or very important, whereas a minority (26.9 percent) rated it as of no importance or not very important. These findings indicate that, for the majority of respondents, newspaper publications serve an important function as a source of educational information for superannuation purposes. This result is supported by the Hilgert, Hogarth and Beverly (2003) study that found households in the United States (US) prefer to receive financial information through newspapers.

Table 5.33 The Importance Placed on Newspaper Publications for Superannuation Education Needs

Importance Placed on Newspaper Publications for Superannuation Education Needs	Frequency	Percent	Cumulative Percent
No Importance	33	9.6	9.6
Not Very Important	59	17.3	26.9
No Opinion	49	14.3	41.2
Moderately Important	174	50.9	92.1
Very Important	27	7.9	100.0
Total	342	100.0	
Mean			**3.30**
Standard Deviation			**1.13**

5.5.5.2 Financial Magazines

Table 5.34 identifies the importance respondents placed on financial magazines for their superannuation educational needs. It indicates that 46.3 percent of respondents rated this information as either moderately or very important, whereas 34.8 percent rated it as of no importance or not very important. These results indicate that many respondents place little importance on financial magazines for their education requirements. Hilgert, Hogarth and Beverly (2003) found that households in the US had a preference to receive information through magazines. However, the information presented in magazines is generalised in nature, and may explain why it did not receive a higher mean rating for importance by respondents to this study.

Table 5.34 The Importance Placed on Financial Magazines for Superannuation Education Needs

Importance Placed on Financial Magazines for Superannuation Education Needs	Frequency	Percent	Cumulative Percent
No Importance	61	18.0	18.0
Not Very Important	57	16.8	34.8
No Opinion	64	18.9	53.7
Moderately Important	127	37.5	91.2
Very Important	30	8.8	100.0
Total	339	100.0	
Mean			**3.02**
Standard Deviation			**1.27**

5.5.5.3 Radio and Television

Table 5.35 identifies the importance respondents placed on radio and television for their superannuation educational needs. It shows that 38.9 percent of respondents found this source to be either of no importance or of little importance, while 40.9 percent found this source to be either moderately or very important. The findings are inconclusive, and tend to indicate that few respondents place high importance on radio and television for their educational requirements.

Table 5.35 The Importance Placed on Radio and Television for Superannuation Education Needs

Importance Placed on Radio and Television for Superannuation Education Needs	Frequency	Percent	Cumulative Percent
No Importance	44	12.9	12.9
Not Very Important	89	26.0	38.9
No Opinion	69	20.2	59.1
Moderately Important	123	36.0	95.1
Very Important	17	4.9	100.0
Total	342	100.0	
Mean			**2.94**
Standard Deviation			**1.15**

5.5.5.4 Personal Financial Adviser or Planner

Table 5.36 identifies the importance respondents placed on a personal financial adviser or planner for their superannuation educational needs. It shows that 49 percent of respondents rated this information as either moderately or very important. Significantly, almost a quarter of respondents (23.3 percent) rate this source as very important. In contrast, this result differs from those for newspaper publications, financial magazines and, radio and television, where a much smaller percentage of respondents rated those sources as very important. It is also noted that a minority of respondents (28.6 percent) rated the personal financial adviser or planner as either of no importance or not very important.

Table 5.36 The Importance Placed on Personal Financial Adviser or Planner for Superannuation Education Needs

Importance Placed on Personal Financial Adviser or Planner for Superannuation Education Needs	**Frequency**	**Percent**	**Cumulative Percent**
No Importance	47	13.9	13.9
Not Very Important	50	14.7	28.6
No Opinion	76	22.4	51.0
Moderately Important	87	25.7	76.7
Very Important	79	23.3	100.0
Total	339	100.0	
Mean			**3.30**
Standard Deviation			**1.34**

5.5.5.5 Friends and Colleagues

Table 5.37 indicates that a majority of respondents (57.1 percent) rate friends or colleagues as either moderately or very important sources for their superannuation education. This indicates a substantial reliance on friends or colleagues when it comes to obtaining information on superannuation matters. A small minority of respondents (24.7 percent) rated this source as of no importance or not very important. This result is consistent with the Clark-Murphy and Gerrans (2001) study that found 48.9 percent of respondents consulted with work colleagues when deciding whether to change from a defined benefit plan to a defined contribution plan. Duflo and Saez (2002) in their US study also confirm the high importance placed by workers on their colleagues when it came to participation and investment decisions in a retirement plan.

Table 5.37 The Importance Placed on Friends and Colleagues for Superannuation Education Needs

Importance Placed on Friends and Colleagues for Superannuation Education Needs	Frequency	Percent	Cumulative Percent
No Importance	32	9.4	9.4
Not Very Important	52	15.3	24.7
No Opinion	62	18.2	42.9
Moderately Important	163	48.0	90.9
Very Important	31	9.1	100.0
Total	340	100.0	
Mean			**3.32**
Standard Deviation			**1.12**

5.6 Summary

This chapter contains a discussion of how the data were prepared for analysis. The use of a web-based survey for data collection eliminated the need to manually transfer data to a spreadsheet, thus avoiding transcriptions errors. The number of respondents was 406 representing a survey response rate of 30.1 percent. The data collected were analysed using the SPSS statistical analysis software. Where applicable, descriptive statistics such as frequencies, percentages, central tendency and dispersion, were used in analysing and presenting the results.

The responses to the demographic questions on gender, age and education were representative of the university sector as indicated in section 5.4.1. It was also revealed that the respondents' attitude to risk and knowledge in financial matters generally aligned to findings in other studies surveying members of the university sector superannuation fund. The respondent superannuation account balances were broadly representative of a range of values in the different categories. In regard to employment, academics were more highly represented in the response count than non-academics. However, it is not possible to determine from available information what the membership split is for academics and non-academics for the university sector superannuation defined contribution fund.

It was found that written communications was the most utilised information resource followed by (in descending order) the superannuation fund website, educational seminars, and financial counselling. These findings support previous research by Clark-Murphy and Gerrans (2001), except in the current study website access was found to be much more highly utilised as an information resource. For those respondents indicating that they used these educational resources (seminars, website, written communications and financial counselling), a large majority considered them important for their superannuation financial decision making. Those who used these educational resources indicated that they did not use them often, except for written communications, which was often accessed by the majority of respondents.

The respondents who indicated that they utilised the educational resources were asked to rate their usefulness on criteria such as instruction and information. Their agreement or disagreement to these rating questions was presented and a mean response was generated in order to address the research questions. A summated mean was calculated for all question items for all the educational resources. All the educational resources were, on average, rated highly by respondents. The financial counselling service received the highest mean rating by users, followed by the educational written communications, seminar, and superannuation website. This indicates that the educational resources are generally informing users on superannuation fund investment matters. Respondents also rated highly the presentation of information at seminars and the communication with the financial counsellor. A set of statements was also presented to those respondents that indicated that they have accessed the superannuation website asking them to rate the importance of certain website information. All the items received a high rating for importance, but in particular website items relating to the return performance of investment choices, expected future return performance of investment options, and risk characteristics relating to the investment options.

Respondents who indicated that they did not use any of the educational resources were directed to another section of the survey to determine the reasons why this was the case. The results obtained from respondents indicated that a lack of time, a lack of motivation, and obtaining information requirements from other sources were the main factors for not utilising the information resources. Factors such as a lack of awareness, a lack of interest, or not perceiving any benefit were not well supported as reasons for not utilising the information resources.

The final section dealt with other non-superannuation fund provided sources of information. All respondents were asked to rate the importance placed on these items for their superannuation educational needs. Information obtained from friends and colleagues was rated highest followed (in descending order) by newspaper publications, personal financial adviser or planner, financial magazines, and radio and television. It appears from the results to these questions that non-superannuation fund sources of information also play an important role in informing superannuation fund members on investment issues.

Overall the evidence acquired appears to support the need for both superannuation fund and non-superannuation fund provided educational information in order to meet members' information requirements. The results also provide support for the capacity of superannuation fund educational information resources to inform defined contribution fund members through information, instruction, and advice, so that they can make informed investment choice.

Chapter Six

Quantitative Data Analysis II: Inferential Statistics and Cross Tabulations

6.1 Introduction

The descriptive data analysis discussed in the previous chapter was concerned with summarising and presenting data in a tabular format so as to determine patterns and relationships which are not apparent in the raw data. Descriptive statistics such as frequency, mean, and standard deviation were calculated to assist in understanding the usefulness of superannuation fund educational information which included seminars, superannuation fund website, written communications received from the superannuation fund, and superannuation fund provided financial counselling. Information was gathered to determine the extent and frequency of use, by members, of these educational resources and the importance that they place on this information for their investment needs. Further analysis was performed to determine the degree to which these educational resources contributed to members being more informed on superannuation fund matters. Multiple factors were explored to determine the reasons why educational resources were not being used by superannuation fund members. Analysis was also performed to determine the importance members place on other (non-superannuation fund) educational information.

Inferential statistics are usually distinguished from descriptive statistics. Descriptive statistics are used to describe simply the features of the data. Inferential statistics are used to try and infer from the sample data, the opinions of the population, or to make judgements of the probability that an observed difference between groups of respondents is dependable or whether it may have happened by mere chance in the study (Trochim 2006). This is done by conducting tests for significance such as ANOVA, and chi-square tests of independence to examine whether group responses to variables significantly differ from one another. Significance tests are extremely common in social research (Mohr 1993). In this chapter significance tests will be

applied to the descriptive data, which were discussed in the previous chapter, to determine whether there are any substantial differences in the responses for the different demographic and background groups. The next section in this chapter will be a discussion on statistical significance and the selection and implications of a significance level. This will be followed by a discussion on the significance tests applied to the data, and an analysis of results will follow. All the Tables in this chapter were developed from the research.

6.2 Tests of Significance

The process of using a test of statistical significance to generalise from a sample to a population is known as statistical inference. Somekh and Lewin (2005, p. 227) explain that:

> The test of significance enables us to say how confident we are that the result achieved from the analysis of data from the sample is a real result or if it is as a result of chance.

To perform tests of significance we must first choose a significance level. Lewis et al. 2004 suggest that in practice it is common to set it at 1 percent, 5 percent, or 10 percent. The researcher can control the risk of committing an error by setting a more stringent significance level (Connolly 2007). However, one of the consequences of making the significance level more stringent is that it increases the risk of rejecting a finding from the sample even though it may be truly representative of the population. Therefore, the decision of where to set the statistical significance level involves a trade-off between rejecting a research proposition when it is true or accepting it when it is false (Connolly 2007). A decision was made to apply a 10 percent significance level to all the statistical tests applied throughout this chapter. With all significant findings the level of significance will be reported so that the reader can ascertain whether the result was significant at the 1 percent, 5 percent, or 10 percent level. It is concluded that by setting the level of significance at 10 percent this will moderate the risk of rejecting a research proposition when it is true or accepting the research proposition when it is false.

6.3. Tests for Differences in Means for Demographic and Background Groups

To determine whether there is any statistical significance between the mean responses of different groups the group means responses must be compared. The question then asked is: are these differences between the means sufficiently large as to reflect real population differences, or could the difference between the means simply be the result of error? The process commences by assuming that any differences between group means are a result of sampling error, and that the real difference between the group means is effectively zero (De Vaus 2002). The t-test or F-test can be used to examine whether group means significantly differ from each other. Both these tests have a similar interpretation but deciding which one to select will depend in part on the number of groups being compared (De Vaus 2002). The t-test compares two groups, while the F-test compares the means of more than two groups. In the next section significance will be tested using a dichotomous independent variable to identify significant mean differences for the different demographic and background groups. The t-test will be used to test for significance for groups with two demographic and background categories. The assumption made is that the means of the demographic group categories are equal. If there is a significant difference in the mean responses of the group categories, then unequal mean responses are assumed.

6.3.1 T-Tests for Differences in Means for Dichotomous Independent Groups

The t-test assesses whether the means of two groups are statistically different from each other. In most survey research it is appropriate to use the independent samples t-test (De Vaus 2002). This analysis is appropriate whenever a comparison of the means of two groups is required. The question the t-test addresses is whether the means are statistically different (Trochim 2006). Differences in mean value may exist within a single sample between different characteristics of the respondents. However, the calculation of the t-test is different depending on whether the two independent groups have equal or unequal mean variance.

The Levene's test is used to determine whether the variance between two groups is significantly different. If the Levene's test is significant and equality of variance is not assumed the t-test is used, otherwise the t-test is used where equal variances are assumed. In this study differences may occur between: males and females; those with and without previous employment history in investment and finance; those with and without formal education in investment and finance; those who are knowledgeable and those who are not knowledgeable in investment matters, and academic and non-academic staff. In the following sections both the Levene's test for equality of variances, and the t-test results for equality of means will be analysed for the dichotomous independent groups to test for significant differences in the means for these groups.

6.3.1.1 Differences between Males and Females

Table 6.1 presents the results of the independent samples t-test that was conducted to investigate whether there are significant differences in mean values and variances between the mean responses of males and females to questions on the superannuation fund provided educational information resources (seminars, website, written communications, and financial counselling). The significance values of the Levene's test in Table 6.1 were insignificant in all cases, and so equality of variance is assumed between males and females for all the listed educational items. Therefore, the normal t-test based on equal variances has been used in all cases. The t-tests indicate no significant differences in mean values between males and females for all the educational resources. That is, the two groups (males and females) almost always had the same perspective towards the educational information supplied by the superannuation fund. The difference in mean responses is shown in the last column of Table 6.1. A negative sign means that the mean values of the responses from males was lower in value than the mean values obtained from females.

Table 6.1 Mean and Variance Differences to Educational Resources with Respect to Gender

Sample Group	Superannuation Fund Educational Information	Levene's Test for Equality of Variances		t-test for Equality of Means		Differences in Means
		F	Sig	t	Sig (2-tailed)	
Male / Female	Seminar Presentation	0.764	0.383	0.980	0.328	0.3514
	Informed by Seminar	0.101	0.751	0.882	0.379	0.4874
	Informed by Website	1.547	0.215	0.764	0.446	0.6667
	Informed by Written Communications	1.482	0.225	1.076	0.283	0.4849
	Communication by Financial Counsellor	0.822	0.368	-0.547	0.586	-0.2294
	Informed by Financial Counselling	0.760	0.386	0.537	0.593	0.3444

6.3.1.2 Differences between those with Employment History and those without Employment History in Investment and Finance

Table 6.2 presents the results of the independent samples t-test that was conducted to investigate whether there are significant differences in mean values and variances between the mean responses of those with employment history and those without employment history in the area of investment and finance, to questions on the superannuation fund provided educational information resources. The values produced using the Levene's tests were insignificant in all cases, except for seminar presentation and so equality of variance is assumed amongst the two groups for all the listed educational items, but not for seminar presentation. Other than for seminar presentation, the normal t-test based on equality in variance has been used. The t-tests report no significant differences in mean values between the two groups in their rating of superannuation fund educational resources, except for the mean rating of the superannuation fund website. In this case those without any employment history in investment and finance rated the educational information received on the

superannuation fund website more highly than those who had employment history in this area. The difference in the means between the two groups was -1.5709 (refer Table 6.2).

Table 6.2 Mean and Variance Differences to Educational Resources with Respect to Employment History in Investment and Finance

Sample Group	Superannuation Fund Educational Information	Levene's Test for Equality of Variances		t-test for Equality of Means		Differences in Means
		F	Sig	t	Sig (2-tailed)	
Those with and those without employment history in investment and finance	Seminar Presentation	3.153	0.078*	1.223	0.224	0.4316
	Informed by Seminar	0.785	0.377	-0.270	0.788	-0.1636
	Informed by Website	0.169	0.681	-1.673	0.096*	-1.5709
	Informed by Written Communications	0.108	0.743	0.305	0.760	0.1543
	Communication by Financial Counsellor	2.101	0.152	0.041	0.968	0.0205
	Informed by Financial Counselling	1.812	0.183	0.093	0.927	0.0714

* Significant at the 10 percent level

6.3.1.3 Differences between those with Formal Educational Training and those without Formal Educational Training in Investment and Finance

Table 6.3 presents the results of the independent samples t-test that was conducted to investigate whether there are significant differences in mean values and variances between the mean responses of those with formal educational training and those without formal educational training in the area of investment and finance, to questions on the superannuation fund provided educational information resources. The Levene's test was insignificant in all but one case (seminar presentation). For all the other

educational items, equality of variance is assumed amongst the two groups. Therefore, the normal t-test based on equality in variance has been used in all cases, except for the presentation of seminar information. The t-tests report insignificant differences in mean values between the two groups in their rating of superannuation fund educational sources, except for the mean ratings relating to the presentation of seminar information and the superannuation fund website. Those with formal education in investment and finance rated more highly the presentation of seminar information than those without any educational training in finance and investment. Those without educational training rated more highly the information received on the superannuation fund website (consistent with previous finding) than those with educational training. The difference in the means between the two groups was 0.6422 and -1.7276 respectively.

Table 6.3 Mean and Variance Differences to Educational Resources with Respect to Formal Educational Training in Investment and Finance

Sample Group	Superannuation Fund Educational Information	Levene's Test for Equality of Variances		t-test for Equality of Means		Differences in Means
		F	Sig	t	Sig (2-tailed)	
Those with and those without formal educational training in investment and finance	Seminar Presentation	2.891	0.091*	1.761	0.082*	0.6422
	Informed by Seminar	0.079	0.779	0.340	0.734	0.2181
	Informed by Website	1.517	0.219	-1.867	0.063*	-1.7276
	Informed by Written Communications	2.191	0.140	-0.399	0.690	-0.1929
	Communication by Financial Counsellor	0.957	0.331	-1.184	0.241	-0.6000
	Informed by Financial Counselling	1.445	0.233	-1.212	0.229	-0.9211

* Significant at the 10 percent level

6.3.1.4 Differences between those with Little or No Knowledge and those with Moderate or Substantial Knowledge in Investment Matters

Table 6.4 presents the results of the independent samples t-test that was conducted to investigate whether there are significant differences in mean values and variances between the mean responses of those with little or no knowledge, and those with moderate or substantial knowledge in investment matters, to questions on the superannuation fund provided educational information resources (seminars, website, written communications, and financial counselling).

Table 6.4 Mean and Variance Differences to Educational Resources with respect to those with Little or No Knowledge and those with Moderate or Substantial Knowledge in Investment Matters

Sample Group	Superannuation Fund Educational Information	Levene's Test for Equality of Variances		t-test for Equality of Means		Differences in Means
		F	Sig	t	Sig (2-tailed)	
Those with no or little knowledge and those with moderate or substantial knowledge in investment matters	Seminar Presentation	0.290	0.591	-1.215	0.226	-0.4604
	Informed by Seminar	0.129	0.720	-1.408	0.161	-0.8165
	Informed by Website	0.469	0.494	-0.694	0.488	-0.6436
	Informed by Written Communications	0.136	0.713	-1.032	0.303	-0.5014
	Communication by Financial Counsellor	2.689	0.106	-0.859	0.393	-0.3490
	Informed by Financial Counselling	1.909	0.172	-1.447	0.153	-0.9187

The values produced by the Levene's test in Table 6.4 were insignificant in all cases, indicating homogenous variances amongst the two groups for all the listed educational items. Therefore, the normal t-test based on equal variances was used in all cases. The t-tests report no significant differences in mean values for the two groups for all the educational resources. That is, the two groups almost always had the

same perspective towards the educational information supplied by the superannuation fund. The difference in mean responses is shown in the last column of Table 6.4. A negative sign means that the mean values of the responses from males was lower than the mean values obtained from females.

6.3.1.5 Differences between Academics and Non-Academics

The results of the independent samples t-test are presented in Table 6.5. This test was used to investigate whether there were any significant differences in mean values and variances between the mean responses of academics and non-academics to questions on the superannuation fund provided educational information resources. The values produced by the Levene's tests were insignificant in three of six cases. Presentation of seminar information, informed by seminar, and informed by the superannuation website had a significant p-value and equal variances could not be assumed. For all the other educational items (informed by written communications, communications by financial counsellor, informed by financial counselling), equality of variance is assumed amongst the two groups. Therefore, the normal t-test based on inequality in variance has been used for the first three cases, and equality of variance for the last three cases. The t-tests report insignificant differences in mean values between the two groups in their mean ratings relating to communication of information by the financial counsellor, and informed by financial counselling. For all the other items significant differences were found. A review of mean differences shows that non-academics' mean rating for all these four educational items (presentation of seminar information; informed by seminar; informed by superannuation website, and informed by written communications) is substantially higher than academics.

Table 6.5 Mean and Variance Differences to Educational Resources with Respect to Academics and Non-Academics

Sample Group	Superannuation Fund Educational Information	Levene's Test for Equality of Variances		t-test for Equality of Means		Differences in Means
		F	Sig	t	Sig (2-tailed)	
Academics and Non-Academics	Seminar Presentation	12.235	0.001**	-1.837	0.068*	-0.5916
	Informed by Seminar	3.131	0.079*	-1.859	0.065*	-1.0121
	Informed by Website	2.817	0.095*	-3.043	0.003**	-2.5909
	Informed by Written Communications	0.463	0.497	-1.650	0.100*	-0.8366
	Communication by Financial Counsellor	0.073	0.787	0.783	0.406	0.4193
	Informed by Financial Counselling	0.947	0.334	0.642	0.466	0.5625

*Significant at the 10% level

** Significant at the 5% level

6.3.2 Analysis of Variance (ANOVA) F-Test in Means for Independent Groups

ANOVA involves testing the difference between means of more than two groups on one factor (Salkind 2006). With ANOVA, the F-ratio is the statistic used to test whether or not group means are equal. ANOVA will therefore be used to determine whether there are any significant differences in the means of the following combined groupings: those aged between 18-39, 40-49, and 50+; educated at postgraduate level, undergraduate level, or with no undergraduate qualification; attitude to investment risk is either conservative, neutral, or aggressive; and superannuation account balance is either less than $100,000, between $100,000-$500,000, more than $500,000, or the balance is unknown.

Where the F-test statistic identifies a significant relationship, and there are more than two groups, it will then be unclear where the differences among the group means lie. In this case, Lomax (2007a) suggests that some multiple comparison procedure (post-hoc tests) should be used to determine where the mean differences are in the groups. However, these post-hoc tests should only be performed after overall significance has been established (Bakeman & Robinson 2005). There are numerous post-hoc test alternatives from which to choose. Morgan, Gliner and Harmon (2006) list the most common post-hoc tests as: Fisher's least significance difference test (LSD); Tuckey's honestly significant difference test (HSD); Newman-Keuls test, Scheffe's test; and, Dunnett's test. The LSD post-hoc test is used in this research study to identify any significant relationships that exist between the groups, and will follow from ANOVA discussions. The category groups to be analysed in this section are all three-category groups, except for superannuation account balances, which has four categories. The LSD test is said to have precise control of the family-wise error rate (the probability of rejecting a research proposition where it is true of the population when performing multiple pair-wise tests) for three-category group situations (Lomax 2007b).

6.3.2.1 Differences Between Groups Based on Age

The results to the ANOVA F-tests are presented in Table 6.6. These tests are conducted to investigate whether there are any significant differences in mean values between those in the age categories 18-39, 40-49, and 50+. The F-test shows no significant differences in mean values between the three groups in their ratings for all superannuation fund educational information. That is, the three age groups have the same perspective towards the educational information supplied by the superannuation fund. As stated in the previous section, there is no need to proceed to the post-hoc tests as no significant relationships were found.

Table 6.6 Mean Differences to Educational Resources with Respect to Age

Sample Group	Superannuation Fund Educational Information	F-Value	Sig.
Age Categories:	Seminar Presentation	2.059	0.131
18-39	Informed by Seminar	0.389	0.678
40-49	Informed by Website	1.367	0.257
50+	Informed by Written Communications	1.570	0.210
	Communication by Financial Counsellor	0.330	0.720
	Informed by Financial Counselling	0.028	0.973

6.3.2.2 Differences Between Groups Based on Education

ANOVA F-tests were conducted to investigate whether there are any significant differences in mean values between the mean responses of those educated at the postgraduate level, undergraduate level, and those with no undergraduate qualification, to questions on superannuation fund provided educational information resources. The results presented in Table 6.7 show no significant differences in mean values between the three groups in their ratings for all of the superannuation fund educational information, except for informed by seminars, and informed by the superannuation fund website. Therefore, the respondents in the three education level categories have the same perspective towards seminar presentation, informed by written communications, communication by financial counsellor, and informed by financial counsellor. They had different perspectives on informed by seminar, and informed by the superannuation fund website. The LSD post-hoc tests on these significant educational resources are presented in Table 6.8. It shows that for the educational information variable, informed by seminar, there was a significant mean difference between the postgraduate-qualified and the no undergraduate qualification groups. There was also a significant mean difference between the undergraduate-qualified with the no undergraduate qualification groups. No significant mean differences were found between the postgraduate qualified and the undergraduate qualified groups. This indicates a significant mean difference between those educated at the undergraduate level and above, and those having no undergraduate qualification.

Table 6.7 Mean Differences to Educational Resources with Respect to Education

Sample Group	Superannuation Fund Educational Information	F-Value	Sig.
Education Categories: Postgraduate; Undergraduate; No Undergraduate qualification	Seminar Presentation	0.314	0.731
	Informed by Seminar	3.234	0.042*
	Informed by Website	4.770	0.009*
	Informed by Written Communications	0.601	0.549
	Communication by Financial Counsellor	1.134	0.328
	Informed by Financial Counselling	0.482	0.620

*Significant at the 5% level

Table 6.8 The Results of the Fisher's Least Significance Difference Tests (LSD) for Educational Level

Superannuation Fund Educational Information with Significant F-Test	Education Level Inter Group Relationships		Sig.
Informed by Seminar	Postgraduate	Undergraduate	0.040**
	Postgraduate	No Undergraduate	0.869
	Undergraduate	No Undergraduate	0.076*
Informed by Website	Postgraduate	Undergraduate	0.375
	Postgraduate	No Undergraduate	0.003**
	Undergraduate	No Undergraduate	0.086*

*Significant at the 10% level

** Significant at the 5% level

6.3.2.3 Differences between Groups Based on Attitude Towards Investment Risk

Table 6.9 presents the results from the ANOVA F-tests that were conducted to investigate whether there were any significant differences in mean values between those with a conservative, neutral, or aggressive attitude towards investment risk, to questions on superannuation fund provided educational information resources. The F-tests show no significant differences in the mean values between the three groups to all the superannuation fund educational information. Therefore, there are no significant differences in mean values of these groups. That is, the three groups (conservative, neutral, and aggressive) have the same perspective towards the educational information supplied by the superannuation fund. There is no need to proceed to post-hoc tests, as the F-ratio was insignificant in all cases.

Table 6.9 Mean Differences to Educational Resources with Respect to Investment Attitude Towards Risk

Sample Group	Superannuation Fund Educational Information	F-Value	Sig.
Risk Attitude: Conservative, Neutral, and Aggressive	Seminar Presentation	0.675	0.510
	Informed by Seminar	0.256	0.774
	Informed by Website	2.002	0.137
	Informed by Written Communications	0.030	0.970
	Communication by Financial Counsellor	2.156	0.124
	Informed by Financial Counselling	1.800	0.173

6.3.2.4 Differences between Groups based on Dollar Balance in Superannuation Account

ANOVA F-tests were run to investigate whether there are any significant differences in mean values between the mean responses of those with the following account balances: less than $100,000; between $100,000 and $500,000; more than $500,000; balance unknown. The test results are presented in Table 6.10. The F-test shows no significant differences in mean values between the four groups in their mean ratings for all of the superannuation fund educational information, except for seminar

presentation. Therefore, the respondent groups with different account category balances have the same perspective towards informed by seminar, informed by website, informed by written communications, communication by financial counsellor, and informed by financial counselling. The groups did however have a different opinion on seminar presentation. In this case it is not possible to perform a post-hoc test as one group (balance unknown) had fewer than two cases (one case). Ignoring this single case, the mean values for the group categories for seminar presentation, indicate that the group with a balance between $100,000 and $500,000 appears to have a relatively larger mean (13.821) than the other two groups: <$100,000 group (13.133), and >$500,000 group (13.268).

Table 6.10 Mean Differences to Educational Resources with Respect to Balance in Superannuation Account

Sample Group	Superannuation Fund Educational Information	F-Value	Sig.
Account Balances: Below $100,000; Between $100,000 and $500,000; More than $500,000; Balance Unknown	Seminar Presentation	2.247	0.085*
	Informed by Seminar	0.468	0.705
	Informed by Website	0.597	0.618
	Informed by Written Communications	0.289	0.834
	Communication by Financial Counsellor	1.488	0.226
	Informed by Financial Counselling	1.270	0.291

*Significant at the 10 percent level

6.4 Chi-square Tests of Independence for Differences in Responses of Independent Demographic and Background Groups

The chi-square test for independence is said to be the most common type of statistical significance test used by social researchers (David & Sutton. 2004; Williams 2003). The chi-square test is applied to contingency tables that cross-tabulate the relationship between variables. The Table consists of rows and columns where the column represents the categories of one variable and the rows represent categories of another variable. The intersection of the column and a row produces a cell which represents cases having the attributes of the variables of that column and row. The chi-square

test is used to determine whether enough evidence exists from the data to conclude that there is a significant statistical relationship between the two variables. David and Sutton (2004) suggest that it allows the researcher to judge whether the observed differences in the variables are real and not due to fluctuations that occur by chance. The statistical significance of a chi-square is measured through a p-value. If this p-value is below the designated significance level (10 percent for this research study), then it is considered that no significant difference exists between the variables. It is also important to note that with chi-square calculations no more than 20 percent of frequency cells should contain an expected count of less than five, otherwise the result may be deemed inaccurate. (Somekh & Lewin 2005). Any violations relating to the requirement of a minimum expected count of five are reported in the SPSS output as part of the chi-square calculation. No violations were expected, and none occurred. In the sections to follow, comparisons are made by reviewing single question responses to the superannuation fund provided educational information to establish any significant differences with the various demographic and background groups. The analysis also extends to the data relating to non-superannuation fund sources of information to check for significant differences in the responses provided by the demographic and background groups.

6.4.1 Differences between Groups with Respect to Attending the Educational Seminar

Chi-square tests of independence were conducted to determine whether the demographic or background group categories were statistically significant when it came to attending the educational seminars. No significant relationships were found for qualification level, previous employment history in investment and finance, formal educational training in investment and finance, and attitude to risk. The following analysis focuses on those groups where significant differences in response categories were established.

Table 6.11 indicates statistical significance for gender and attending a seminar (p=0.014), and shows that the probability of a male attending a seminar is greater than a female attending. Table 6.11 shows that 49.2 percent of male respondents indicated that they had attended a seminar, whereas only 37 percent of female respondents indicated attending a seminar.

Table 6.11 Cross-tabulation of Seminar Attendance by Gender

Gender	Attended Seminar		Row Total
	Yes	No	
Male	91	94	185
	49.2%	50.8%	100.0%
Female	78	133	211
	37.0%	63.0%	100.0%
Total	169	227	396

Chi-square = 6.019 P = 0.014*

Table 6.12 indicates statistical significance for age and attending a seminar (p=0.000). It is shows that the older, 50+ years group, is far more likely to attend a seminar than either the 18-39 year or the 40-49 years age groups. It is also revealed that the 40-49 years age group is more likely to attend a seminar than the 18-39 age group. For the 18-39 year category only 24.2 percent indicated they had attended a seminar. In the 40-49 year age category 38.7 percent indicated that they had attended a seminar, and in the 50+ years age category 58.7 percent indicated that they had attended a seminar.

Table 6.12 Cross-tabulation of Seminar Attendance by Age

Age Group	Attended Seminar		Row Total
	Yes	No	
18-39 Years	29	91	120
	24.2%	75.8%	100.0%
40-49 Years	43	68	111
	38.7%	61.3%	100.0%
50+ Years	98	69	167
	58.7%	41.3%	100.0%
Total	170	228	398

Chi-square 34.991 p =0.000*

Statistical significance was found for knowledge of finance and investment matters and attending seminars (p=0.001). Table 6.13 indicates that those with moderate or substantial knowledge were more likely to attend the seminar than those with little or no knowledge. A total of 50.7 percent of those respondents in the moderate or substantial knowledge category indicated that they had attended a seminar, whilst a lower 33.5 percent of those respondents in the little or no knowledge category indicated that they had attended a seminar. This result indicates that the seminar is providing information to a substantial number of respondents who have moderate or substantial knowledge in investment matters.

Table 6.13 Cross-tabulation of Seminar Attendance by Knowledge of Finance and Investment Matters

Investment Knowledge	Attended Seminar		Row Total
	Yes	No	
Little/None	57	113	170
	33.5%	66.5%	100.0%
Moderate/Substantial	112	109	221
	50.7%	49.3%	100.0%
Total	169	222	391

Chi-square = 11.515 P = 0.001*

Statistical significance was found for area of employment and attending a seminar (p=0.074). Non-academics are more likely to attend an educational seminar than academics. Table 6.14 indicates that 49.6 percent of non-academic respondents had attended a seminar, whilst 39.9 percent of academics attended a seminar.

Table 6.14 Cross-tabulation of Seminar Attendance by Area of Employment

Employment Area	Attended Seminar		Row Total
	Yes	No	
Academic	109	164	273
	39.9%	60.1%	100.0%
Non-academic	60	61	121
	49.6%	50.4%	100.0%
Total	169	225	394

Chi-square = 3.194 P = 0.074*

Table 6.15 identifies a significant finding for superannuation account balance and attending an educational seminar (p =0.000). Those groups with more than $500,000 in their superannuation were more likely to attend a seminar than those with lower balances. It also shows that the group with a balance less than $100,000, and the balance unknown group are less likely to attend a seminar than the higher account balance groups. Only 5.3 percent of the balance unknown group indicated attending a seminar. The more than $500,000 account balance group had the highest attendance percentage (67.2 percent) followed by the $100,000 to $500,000 group (46.1 percent), and the less than $100,000 group (29.0 percent). The findings reveal that those with higher account balances are much more likely to engage with the education provided through a seminar than those with relatively smaller account balances.

Table 6.15 Cross-tabulation of Seminar Attendance by Superannuation Account Balance

Superannuation Account Balance	Attended Seminar		Row Total
	Yes	No	
Less than $100,000	31	76	107
	29.0%	71.0%	100.0%
$100,000 - $500,000	77	90	167
	46.1%	53.9%	100.0%
More than $500,000	41	20	61
	67.2%	32.8%	100.0%
Balance Unknown	1	18	19
	5.3%	94.7%	100.0%
Total	150	204	354

Chi-square 34.953 p =0.000*

6.4.2 Differences between Groups with Respect to Accessing the Superannuation Fund Website

Chi-square tests of independence were conducted to determine whether the demographic or background group categories were statistically significant when it came to accessing the superannuation fund website. No significant relationships were found for age, qualification level, and area of employment. The following analysis

focuses on those groups where significant differences in response categories were established.

Table 6.16 shows that statistical significance was found for gender and accessing the superannuation fund website (p=0.011). The probability of a male accessing the superannuation fund website is greater than a female accessing it. Table 6.16 shows that 67.8 percent of male respondents indicated that they had accessed the website, whereas 55.1 percent of female respondents indicated accessing the website. This is a similar result to that found in section 6.4.1 where significantly more males attended a superannuation seminar than females.

Table 6.16 Cross-tabulation of Accessing Superannuation Fund Website by Gender

	Website Access		**Row Total**
Gender	**Yes**	**No**	
Male	124	59	183
	67.8%	32.2%	100.0%
Female	113	92	205
	55.1%	44.9%	100.0%
Total	237	151	388

Chi-square = 6.496 P = 0.011*

Table 6.17 indicates statistical significance for previous employment in investment and finance and accessing the superannuation fund website (p=0.006). Those with previous employment in investment and finance were more likely to access the superannuation fund website than those without this employment history. Table 6.17 shows that 72.7 percent of those with previous employment in investment and finance had accessed the superannuation website, whereas 57.0 percent of those without such employment history accessed the website.

Table 6.17 Cross-tabulation of Accessing Superannuation Fund Website by Employment History in Investment and Finance

Employment History In Investment and Finance	Website Access		Row Total
	Yes	No	
Yes	72	27	99
	72.7%	27.3%	100.0%
No	162	122	284
	57.0%	43.0%	100.0%
Total	234	149	383

Chi-square = 7.598 P = 0.006*

Table 6.18 indicates strong statistical significance for educational training in investment and finance and accessing the superannuation fund website (p=0.013). Those with educational training in investment and finance were more likely to access the superannuation fund website than those without such training. The Table shows that 71.3 percent of those with educational training in investment and finance had accessed the superannuation website, whereas 57.3 percent of those without such educational training accessed the website.

Table 6.18 Cross-tabulation of Accessing Superannuation Fund Website by Educational Training in Investment and Finance

Educational Training In Investment and Finance	Website Access		Row Total
	Yes	No	
Yes	72	29	101
	71.3%	28.7%	100.0%
No	165	123	288
	57.3%	42.7%	100.0%
Total	237	152	389

Chi-square = 6.152 P = 0.013*

Statistical significance was found for those groups indicating different levels of knowledge in finance and investment matters and accessing the superannuation fund website (p=0.001). Table 6.19 reveals that those with moderate or substantial knowledge were more likely to access the superannuation fund website than those with little or no knowledge. A total of 67.7 percent of respondents in the moderate or

substantial knowledge category indicated that they had accessed the website, whilst 51.5 percent of respondents in the little or no knowledge category indicated accessing the website. This is a similar result to that found in section 6.4.1 where those with greater knowledge were more likely to attend the seminar than those possessing less knowledge. This result again indicates that those who engage more with the superannuation fund educational information are likely to gain additional knowledge in investment matters.

Table 6.19 Cross-tabulation of Accessing Superannuation Fund Website by Knowledge of Finance and Investment Matters

Knowledge of Finance and Investment Matters	Website Access		Row Total
	Yes	No	
Little/None	84	79	163
	51.5%	48.5%	100.0%
Moderate/Substantial	149	71	220
	67.7%	32.3%	100.0%
Total	233	150	383

Chi-square = 10.305 P = 0.001*

A statistically significant relationship was found for attitude to investment risk and accessing the superannuation fund website (p = 0.018). Those respondents with an aggressive attitude to investment are more likely to access the website than those with a neutral or conservative approach. Table 6.20 shows that 71.6 percent of aggressive investors accessed the website, whereas 59.1 percent of those who were neutral to risk accessed the website. Those who had a conservative attitude to risk indicated the lowest level of website access (55.6 percent). These results confirm that aggressive investors are likely to be more active on the website as part of their aggressive approach to investment.

Table 6.20 Cross-tabulation of Accessing Superannuation Fund Website by Attitude to Investment Risk

Attitude to Investment Risk	Website Access		Row Total
	Yes	No	
Conservative	114	91	205
	55.6%	44.4%	100.0%
Neutral	39	27	66
	59.1%	40.9%	100.0%
Aggressive	83	33	116
	71.6%	28.4%	100.0%
Total	236	151	387

Chi-square 8.032 p =0.018*

Table 6.21 identifies a statistically significant result for superannuation account balance and accessing the website (p = 0.000). Those groups with more than $500,000 in their superannuation account were more likely to access the superannuation fund website than those with lower balances. It also shows that the group with a balance less than $100,000, and the balance unknown group are less likely to access the website than the higher account balance groups. Only 31.6 percent of the balance unknown group indicated that they had accessed the website. The group with more than a $500,000 account balance had the highest level of website access (73.8 percent) followed by the $100,000 to $500,000 group (65.3 percent), and then the less than $100,000 group (48.6 percent). The findings reveal a strong relationship between superannuation account balance and accessing the website. That is, those with higher account balances are more likely to engage the educational information than those with relatively smaller account balances. This result supports the findings in section 6.4.1 regarding superannuation account balances and attendance at the educational seminar, where similar patterns emerged.

Table 6.21 Cross-tabulation of Accessing Superannuation Fund Website by Superannuation Account Balance

Superannuation Account Balance	Website Access		Row Total
	Yes	No	
Less than $100,000	52	55	107
	48.6%	51.4%	100.0%
$100,000 - $500,000	109	58	167
	65.3%	34.7%	100.0%
More than $500,000	45	16	61
	73.8%	26.2%	100.0%
Balance Unknown	6	13	19
	31.6%	68.4%	100.0%
Total	212	142	354

Chi-square 18.923 p =0.000*

6.4.3 Differences between Groups with Respect to Reading the Superannuation Fund Written Communications

Chi-square tests of independence were conducted to determine whether the demographic or background group categories were statistically significant when it came to reading the superannuation fund written communications. No significant relationships were found for age, qualification level, employment history in finance and investment, and area of employment. The following analysis focuses on those groups where significant differences in response categories were established.

Table 6.22 indicates statistical significance for gender (p=0.017). The probability of a male reading the written communications is greater than a female reading them. Table 6.22 shows that 75.3 percent of male respondents indicated that they had read the written communications, whereas, a lower, 63.7 percent of female respondents indicated reading them. This is a similar result to that found in the previous two sections 6.4.1 and 6.4.2 where significantly more males attended a superannuation seminar and accessed the superannuation fund website than females.

Table 6.22 Cross-tabulation of Reading Superannuation Fund Written Communications by Gender

Gender	Written Communications		Row Total
	Yes	No	
Male	128	42	170
	75.3%	24.7%	100.0%
Female	123	70	193
	63.7%	36.3	100.0%
Total	251	112	363

Chi-square = 5.665 P = 0.017*

Table 6.23 indicates statistical significance for educational training in finance and investment and reading the written communication (p=0.003). Those with educational training in investment and finance were more likely to read the superannuation fund written communications. Table 6.23 shows that 80.8 percent of those with educational training in finance and investment had read the written communications, whereas 64.7 percent of those without educational training read them. This result is consistent with what was found in the previous section 6.4.2 where those with educational training in finance and investment were more likely to access the website than those without this educational training.

Table 6.23 Cross-tabulation of Reading Superannuation Fund Written Communications by Educational Training in Investment and Finance

Educational Training In Investment and Finance	Written Communications		Row Total
	Yes	No	
Yes	80	19	99
	80.8%	19.2%	100.0%
No	172	94	266
	64.7%	35.3%	100.0%
Total	252	113	365

Chi-square = 8.800 P = 0.003*

Statistical significance was found for those groups indicating different levels of knowledge in finance and investment matters and reading the written communications (p=0.000). Table 6.24 reveals that those with moderate or substantial knowledge were more likely to read the superannuation fund written communications than those with little or no knowledge. It is shown that 78.6 percent of those respondents in the moderate or substantial knowledge category read the written communications, whereas 55.7 percent of those respondents in the little or no knowledge category read the communications. This is a similar result to that found in sections 6.4.1 and 6.4.2 where those with greater investment knowledge were more likely to attend the seminar and access the website, than those possessing less knowledge. This result again indicates that those who engage more with the superannuation fund educational information are likely to perceive a gain in knowledge in superannuation investment matters.

Table 6.24 Cross-tabulation of Reading Superannuation Fund Written Communications by Knowledge of Finance and Investment Matters

Knowledge of Finance and Investment Matters	Written Communications		Row Total
	Yes	No	
Little/None	83	66	149
	55.7%	44.3%	100.0%
Moderate/Substantial	165	45	210
	78.6%	21.4%	100.0%
Total	248	111	359

Chi-square = 21.337 P = 0.000*

A statistically significant relationship was found for attitude to investment risk and website access (p = 0.004). Those respondents with an aggressive attitude to investment are more likely to access the website than those with a neutral or conservative attitude. Table 6.25 shows that 81.1 percent of aggressive investors read the written communications, whereas 66.1 percent of those who were neutral to risk read them. The conservative attitude group had the lowest readership of the written communications (63.2 percent). These results support the findings of the previous section (6.4.2) where similar results were obtained in regards to accessing the website. These results again confirm that aggressive investors are likely to read the written communications as part of their active approach to investment.

Table 6.25 Cross-tabulation of Reading Superannuation Fund Written Communications by Attitude to Investment Risk

Attitude to Investment Risk	Written Communications		Row Total
	Yes	No	
Conservative	122	71	193
	63.2%	36.8%	100.0%
Neutral	39	20	59
	66.1%	33.9%	100.0%
Aggressive	90	21	111
	81.1%	18.9%	100.0%
Total	251	112	363

Chi-square 10.853 p =0.004*

Table 6.26 identifies a significant result for superannuation account balance and reading the written communications (p = 0.000). Those groups which have more than $500,000 in their superannuation account were much more likely to read the superannuation fund written communications than those with lower balances. Table 6.26 shows that the group with a balance less than $100,000, and the balance unknown group are less likely to read the written communications than the higher account balance groups. Only 21.1 percent of the balance unknown group indicated that they read the written communications. The group with more than a $500,000 account balance had the highest level of respondents reading communications (78.7 percent) followed by the $100,000 to $500,000 group (76.0 percent) and the less than

$100,000 group (61.7 percent). The findings reveal a strong relationship between superannuation account balance and reading the written communications. That is, those with high account balances are much more likely to engage with the educational information than those with relatively smaller account balances. This result supports the findings in sections 6.4.1 and 6.4.2 regarding superannuation account balances and attendance at the educational seminar and website access where similar results were obtained.

Table 6.26 Cross-tabulation of Reading Superannuation Fund Written Communications by Superannuation Account Balance

Superannuation Account Balance	Written Communications		Row Total
	Yes	No	
Less than $100,000	66	41	107
	61.7%	38.3%	100.0%
$100,000 - $500,000	127	40	167
	76.0%	24.0%	100.0%
More than $500,000	48	13	61
	78.7%	21.3%	100.0%
Unknown	4	15	19
	21.1%	78.9%	100.0%
Total	245	109	354

Chi-Square 29.758 p =0.000*

6.4.4 Differences between Groups with Respect to Obtaining Financial Advice from the Superannuation Fund Financial Counsellor

Chi-square tests of independence were conducted to determine whether the demographic or background group categories were statistically significant when it came to obtaining advice from the superannuation fund provided financial counsellor. No significant relationships were found for gender, qualification level, previous employment history in finance and investment, educational training in finance and investment, knowledge of finance and investment matters, attitude to risk and area of employment. The following analysis focuses on those groups where significant differences in response categories were established.

A significant relationship was found for age and receiving advice from a superannuation fund financial counsellor (p=0.002). Table 6.27 shows that the older, 50+ years group, is far more likely to receive financial counselling than the younger 18-39 years group. The 40-49 years group is also more likely to receive financial counselling when compared to the 18-39 years group. Table 6.27 reveals that only 8.9 percent of the 18-39 years category indicated they had received advice from the financial counsellor. In the 40-49 years category, 22.3 percent indicated that they had received financial counselling, and in the 50+ years category 26.2 percent indicated receiving counselling. The findings reveal that the 50+ years group is more likely to use the more specific educational resources such as seminars and financial counselling. This may be the result of the closer proximity to retirement age and concerns about the adequacy of their superannuation savings.

Table 6.27 Cross-tabulation of Obtaining Advice from Financial Counsellor by Age

Age Group	Financial Counselling		Row Total
	Yes	No	
18-39 Years	10	102	112
	8.9%	91.1%	100.0%
40-49 Years	23	80	103
	22.3%	77.7%	100.0%
50+ Years	39	110	149
	26.2%	73.8%	100.0%
Total	72	292	364

Chi-square 12.573 p =0.002*

Table 6.28 identifies a significant statistical difference for superannuation account balance and receiving financial advice (p = 0.048). Those groups which have more than $500,000 in their superannuation account were much more likely to seek advice from a financial counsellor than those with lower balances. It also shows that the group with a balance less than $100,000 is less likely to receive financial advice than the higher account balance groups. It is shown in Table 6.28 that the group with more than a $500,000 account balance had the highest level of respondents receiving financial counselling (31.1 percent) followed by the balance unknown group (21.1 percent), the $100,000 to $500,000 group (21.0 percent), and the less than $100,000

group (13.1 percent). The findings reveal a strong relationship between superannuation account balance and receiving financial counselling. That is, those with high account balances are much more likely to engage with financial counselling than those with relatively smaller account balances. This result supports the findings in sections 6.4.1, 6.4.2 and 6.4.3 regarding superannuation account balances and attendance at the educational seminar, website access, and reading written communications, indicating a similar pattern of behaviour.

Table 6.28 Cross-tabulation of Obtaining Advice from a Financial Counsellor by Superannuation Account Balance

Superannuation Account Balance	Financial Counselling		Row Total
	Yes	No	
Less than $100,000	14	93	107
	13.1%	86.9%	100.0%
$100,000 - $500,000	35	132	167
	21.0%	79.0%	100.0%
More than $500,000	19	42	61
	31.1%	68.9%	100.0%
Balance Unknown	4	15	19
	21.1%	78.9%	100.0%
Total	72	282	354

Chi-square 7.920 p =0.048*

6.4.5 Chi-square Tests Relating to Other Non-superannuation Fund Sources of Education

This section contains a report on chi-square tests of independence to determine any significant relationships between the demographic and background characteristics of respondents against the importance they placed on other non-superannuation fund educational resources. Data were gathered from the respondents on how they rate the importance of newspaper publications, financial magazines, radio and television, personal financial adviser or planner, and friends and colleagues, when it came to their superannuation investment decision making. The descriptive results have been reported in Chapter Five. In the following sections the significant findings in respect

of these other non-superannuation educational resources against the demographics and background characteristics of respondents are analysed.

6.4.5.1 Differences Between Groups in Respect of the Importance Placed on Newspaper Publications

Chi-square tests of independence were conducted to determine whether the demographic or background group categories were statistically significant when it came to the importance placed on newspaper publications by respondents for their superannuation education requirements. No significant relationships were found for age, previous employment history in finance and investment, educational training in finance and investment, and area of employment. The following analysis focuses on those groups where significant differences in response categories were established.

Table 6.29 indicates statistical significance for gender (p=0.002) and the importance placed on newspaper publications. The probability of a male placing more importance on newspaper publications for their superannuation education requirements is greater than that for a female. Table 6.29 shows that 68.4 percent of male respondents indicated that they found the newspaper publications important, whereas only 50.8 percent of female respondents rated them important for superannuation education.

Table 6.29 Cross-tabulation of Importance Placed on Newspaper Publications by Gender

Gender	Newspaper Publications			Row Total
	Little/No Importance	No Opinion	Important	
Male	36	14	108	158
	22.8%	8.8%	68.4%	100.0%
Female	55	35	93	183
	30.1%	19.1%	50.8%	100.0%
Total	91	49	201	341

Chi-square = 12.320 P = 0.002*

Table 6.30 indicates statistical significance for qualification level and the importance placed on newspaper publications (p=0.031). The probability of both those qualified at the postgraduate and undergraduate level placing more importance on newspaper publications for their superannuation education requirements is greater than those without an undergraduate qualification. Table 6.30 shows that around 61 percent of postgraduate and undergraduate qualified respondents indicated that they found the newspaper publications important, whereas only 45.0 percent of respondents with no undergraduate qualification rated them as important for their superannuation needs.

Table 6.30 Cross-tabulation of Importance Placed on Newspaper Publications by Qualification

Level of Qualification	Newspaper Publications			Row Total
	Little/No Importance	No Opinion	Important	
No Undergraduate	11	11	18	40
	27.5%	27.5%	45.0%	100.0%
Undergraduate	8	9	27	44
	18.2%	20.4%	61.4%	100.0%
Postgraduate	73	29	156	258
	28.3%	11.2%	60.5%	100.0%
Total	92	49	201	342

Chi-square = 10.615 P = 0.031*

Statistical significance was found for those groups indicating different levels of knowledge in finance and investment matters and the importance placed on newspaper publications (p=0.001). Table 6.31 reveals that those with moderate or substantial knowledge were more likely to place more importance on newspaper publications for their superannuation education than those with little or no knowledge. It is shown that 67.2 percent of those respondents in the moderate or substantial knowledge category indicated that they found newspaper publications important, whereas 47.1 percent of those respondents in the little or no knowledge category indicated they found them of importance.

Table 6.31 Cross-tabulation of Importance Placed on Newspaper Publications by Knowledge in Finance and Investment Matters

Knowledge in Finance and Investment Matters	Newspaper Publications			Row Total
	Little/No Importance	No Opinion	Important	
None or Little	47	26	65	138
	34.1%	18.8%	47.1%	100.0%
Moderate/Substantial	45	20	133	198
	22.7%	10.1%	67.2%	100.0%
Total	92	46	198	336

Chi-square = 13.909 P = 0.001*

A statistically significant relationship was found for attitude to investment risk and the importance placed on newspaper publications (p = 0.024). Those respondents with an aggressive attitude to investment risk were more likely to find newspaper publications important for their superannuation education than those with a neutral or conservative attitude. Table 6.32 indicates that 70.1 percent of aggressive investors found newspaper publications important, whereas 61.8 percent of those who had a neutral attitude to investment risk found them important. Those who had a conservative attitude to risk placed less importance on newspaper publication (50.6 percent) compared to the other two groups.

Table 6.32 Cross-tabulation of Importance Placed on Newspaper Publications by Attitude to Investment Risk

Attitude to Investment Risk	Newspaper Publications			Row Total
	Little/No Importance	No Opinion	Important	
Conservative	57	31	90	178
	32.0%	17.4%	50.6%	100.0%
Neutral	15	6	34	55
	27.3%	10.9%	61.8%	100.0%
Aggressive	20	12	75	107
	18.7%	11.2%	70.1%	100.0%
Total	92	49	199	340

Chi-square = 11.209 P = 0.024*

A significant result was obtained for superannuation account balance, and the importance placed on newspaper publications (p = 0.025). The group with more than $500,000 in their superannuation account are more likely to find newspaper publications more important for superannuation education requirements than those with lower balances. The balance unknown group are the least likely to find newspaper publications important for their superannuation education. Table 6.33 reveals that the group with an account balance of more than $500,000 found the most importance in newspaper publications (72.7 percent) followed by the $100,000 to $500,000 group (60.0 percent), and then the less than $100,000 group (52.4 percent). The findings show a significant relationship between superannuation account balance and the importance placed on newspaper publications.

Table 6.33 Cross-tabulation of Importance Placed on Newspaper Publications by Superannuation Account Balance

Superannuation Account Balance	Newspaper Publications			Row Total
	Little/No Importance	No Opinion	Important	
Less than $100,000	26	23	54	103
	25.2%	22.4%	52.4%	100.0%
$100,000 to $500,000	48	18	99	165
	29.1%	10.9%	60.0%	100.0%
More than $500,000	9	6	40	55
	16.4%	10.9%	72.7%	100.0%
Balance Unknown	8	2	8	18
	44.4%	11.2%	44.4%	100.0%
Total	91	49	201	341

Chi-square = 14.458 P = 0.025*

6.4.5.2 Differences Between Groups in Respect of the Importance Placed on Financial Magazines

Chi-square tests of independence were performed to establish whether any statistically significant differences exist between the demographic or background groups on the importance they place on financial magazines for their superannuation decisions. No significant relationships were found for age, and attitude towards investment risk. The

following analysis focuses on those groups where significant differences in response categories were established.

Table 6.34 reveals that a statistically significant result was obtained for gender (p=0.023) and the importance placed on financial magazines. Males are more likely to place more importance on financial magazines for their superannuation education requirements than females. Table 6.34 shows that 53.8 percent of male respondents indicated that they found the financial magazines important, whereas 40.1 percent of female respondents rated them important for investment decision making. This result is consistent with what was found in section 6.4.5.1 where more males rated newspaper publications important for their superannuation education than females.

Table 6.34 Cross-tabulation of Importance Placed on Financial Magazines by Gender

Gender	Financial Magazines			Row Total
	Little/No Importance	No Opinion	Important	
Male	50	22	84	156
	32.1%	14.1%	53.8%	100.0%
Female	67	42	73	182
	36.8%	23.1%	40.1%	100.0%
Total	117	64	157	338

Chi-Square = 7.535 P = 0.023*

A statistically significant result (p=0.044) was obtained for qualification level, and the importance placed on financial magazines (Table 6.35). It is more likely that those qualified at the undergraduate level will place more importance on financial magazines for their superannuation education requirements than those with postgraduate qualifications. Table 6.35 shows that 52.4 percent of undergraduate qualified respondents indicated that they found financial magazines important, whereas a lower 45.1 percent of respondents with postgraduate qualifications rated them as important for their superannuation education. Therefore, postgraduate qualified respondents place less importance on financial magazines than the other two groups (undergraduate qualification and no undergraduate qualification).

Table 6.35 Cross-tabulation of Importance Placed on Financial Magazines by Qualification

Level of Qualification	Financial Magazines			Row Total
	Little/No Importance	No Opinion	Important	
No Undergraduate	8	13	19	40
	20.0%	32.5%	47.5%	100.0%
Undergraduate	11	9	22	42
	26.2%	21.4%	52.4%	100.0%
Postgraduate	99	42	116	257
	38.5%	16.4%	45.1%	100.0%
Total	118	64	157	339

Chi-square = 9.808 P = 0.044*

Table 6.36 indicates statistical significance for previous employment in investment and finance, and the importance placed on financial magazines (p=0.000). Those with employment history in investment and finance are more likely to find financial magazines more important for superannuation education requirements than those without employment history in investment and finance. Table 6.36 shows that 65.2 percent of those with previous employment history in investment and finance rated financial magazines important for their superannuation education requirements, whereas a much lower 39.8 percent of those without any such employment history indicated importance of financial magazines.

Table 6.36 Cross-tabulation of Importance Placed on Financial Magazines by Previous Employment in Finance and Investment

Employment History in Finance and Investment	Financial Magazines			Row Total
	Little/No Importance	No Opinion	Important	
Yes	16	15	58	89
	18.0%	16.8%	65.2%	100.0%
No	100	47	97	244
	41.0%	19.3%	39.8%	100.0%
Total	116	62	155	333

Chi-square = 19.161 P = 0.000*

Table 6.37 indicates statistical significance for educational training in investment and finance and the importance placed on financial magazines (p=0.000). Those with educational training in investment and finance are more likely to find financial magazines more important for superannuation education requirements than those without educational training in investment and finance. Table 6.37 shows that 62.0 percent of those with previous educational training in investment and finance placed importance in financial magazines for their superannuation education requirements, whereas 40.5 percent of those without any such educational training indicated importance of financial magazines.

Table 6.37 Cross-tabulation of Importance Placed on Financial Magazines by Educational Training in Finance and Investment

Educational Training in Finance and Investment	Financial Magazines			Row Total
	Little/No Importance	No Opinion	Important	
Yes	24	11	57	92
	26.0%	12.0%	62.0%	100.0%
No	94	53	100	247
	38.0%	21.5%	40.5%	100.0%
Total	118	64	157	339

Chi-square = 19.161 P = 0.000*

Statistical significance (p=0.000) was found for those groups indicating different levels of knowledge in finance and investment matters, and the importance they placed on financial magazines (Table 6.38). Those with moderate or substantial knowledge were more likely to place more importance on financial magazines for their superannuation education than those with little or no knowledge. Table 6.38 reveals that 57.4 percent of those respondents in the moderate or substantial knowledge category indicated that they found financial magazines important, whereas 31.6 percent of those respondents in the little or no knowledge category indicated finding importance.

Table 6.38 Cross-tabulation of Importance Placed on Financial Magazines by Knowledge in Finance and Investment Matters

Knowledge in Finance and Investment Matters	Financial Magazines			Row Total
	Little/No Importance	No Opinion	Important	
None or Little	60	33	43	136
	44.1%	24.3%	31.6%	100.0%
Moderate/Substantial	56	28	113	197
	28.4%	14.2%	57.4%	100.0%
Total	116	61	156	333

Chi-square = 21.505 P = 0.000*

A statistically significant relationship (p = 0.019) was found for area of employment and the importance placed on newspaper publications (Table 6.39). Non-academics are more likely to find financial magazines important for their superannuation education than academics. Table 6.39 indicates that 51.6 percent of non-academics found financial magazines important, whereas 44.2 percent of academics found them important. Academics therefore place less importance on financial magazines for superannuation education compared to non-academics.

Table 6.39 Cross-tabulation of Importance Placed on Financial Magazines by Area of Employment

Area of Employment	Financial Magazines			Row Total
	Little/No Importance	No Opinion	Important	
Academic	94	40	106	240
	39.1%	16.7%	44.2%	100.0%
Non-Academic	23	24	50	97
	23.7%	24.7%	51.6%	100.0%
Total	117	64	156	337

Chi-square = 7.938 P = 0.019*

Table 6.40 reveals a significant result for superannuation account balance and the importance placed on financial magazines (p = 0.018). Those groups which have more than $500,000, between $100,000 and $500,000, and less than $100,000 in their superannuation account were more likely to find financial magazines more important for superannuation education requirements than the balance unknown group.

Therefore the group that indicated balance unknown are the least likely to find financial magazines important for their superannuation education. Table 6.40 shows that 49.1 percent of those with more than a $500,000 account balance and the $100,000 to $500,000 group rate financial magazines as important to their superannuation education, followed by the less than $100,000 group (46.1 percent). Only 11.1 percent of the group that did not know their account balance rated financial magazines as important.

Table 6.40 Cross-tabulation of Importance Placed on Financial Magazines by Superannuation Account Balance

Superannuation Account Balance	Financial Magazines			Row Total
	Little/No Importance	No Opinion	Important	
Less than $100,000	29	26	47	102
	28.4%	25.5%	46.1%	100.0%
$100,000 to $500,000	60	23	80	163
	36.8%	14.1%	49.1%	100.0%
More than $500,000	19	9	27	55
	34.5%	16.4%	49.1%	100.0%
Balance Unknown	10	6	2	18
	55.6%	33.3%	11.1%	100.0%
Total	118	64	156	338

Chi-square = 15.270 P = 0.018*

6.4.5.3 Differences between Groups in Respect of the Importance Placed on Radio and Television

Further statistical testing involving chi-square was used to determine whether the demographic or background group category responses were significantly different when it came to the importance that they place on radio and television for their superannuation decisions. No significant relationships were found for gender, age, qualifications, previous employment history in finance and investment, educational training in finance and investment, knowledge of finance and investment matters, area of employment, and superannuation account balance. The following analysis focuses on those groups where significant differences in response categories were established.

A statistically significant relationship was found for attitude to investment risk and the importance placed on radio and television (p = 0.037). Those respondents with an aggressive or conservative attitude to investment risk are more likely to find radio and television important for their superannuation education than those with a neutral attitude. Table 6.41 reveals that 43.9 percent and 43.5 percent of aggressive and conservative investors respectively found television and radio important, whereas 27.3 percent of those who had a neutral attitude to investment risk found them important. Thus, those who had a neutral attitude to risk placed less importance on radio and television compared to the other two groups.

Table 6.41 Cross-tabulation of Importance Placed on Radio and Television by Attitude to Investment Risk

Attitude to Investment Risk	Radio and Television			Row Total
	Little/No Importance	No Opinion	Important	
Conservative	58	42	77	177
	32.8%	23.7%	43.5%	100.0%
Neutral	28	12	15	55
	50.9%	21.8%	27.3%	100.0%
Aggressive	45	15	47	107
	42.1%	14.0%	43.9%	100.0%
Total	131	69	139	339

Chi-square = 10.224 P = 0.037*

6.4.5.4 Differences between Groups in Respect of the Importance Placed on Personal Financial Adviser or Planner

Chi-square tests were again utilised to determine statistical significance on whether the demographic or background group categories' responses were significantly different when it came to the importance they place on the personal financial adviser or planner for their superannuation decisions. No significant relationships were found for age, employment history in finance and investment, and attitude towards investment risk. The following analysis focuses on those groups where significant differences in response categories were established.

A statistically significant result was obtained for gender and the importance placed on the personal financial adviser or planner (p = 0.008). Table 6.42 reveals that females are more likely to place more importance on personal financial adviser or planner for their superannuation education requirements than males. It is shown that 53.6 percent of female respondents indicated that they found the personal financial adviser or planner important, whereas 43.3 percent of male respondents rated them important for investment decision making. This result is inconsistent with what was found in section 6.4.5.1 and 6.4.5.2 where more males rated newspaper publications and financial magazines important for their superannuation education than females. Therefore, females may prefer more personal and specific interactions rather than reading newspaper and magazines for their superannuation information.

Table 6.42 Cross-tabulation of Importance Placed on Personal Financial Adviser or Planner by Gender

Gender	Personal Financial Adviser or Planner			Row Total
	Little/No Importance	No Opinion	Important	
Male	58	31	68	157
	36.9%	19.8%	43.3%	100.0%
Female	39	45	97	181
	21.5%	24.9%	53.6%	100.0%
Total	97	76	165	338

Chi-square = 9.743 P = 0.008*

Table 6.43 reveals statistical significance between qualification level and the importance placed on the personal financial adviser or planner (p=0.028). It is more likely that those without an undergraduate qualification will place more importance on a personal financial adviser or planner for their superannuation education requirements than those with postgraduate and undergraduate qualifications. Table 6.43 shows that 67.5 percent of those without an undergraduate qualification indicated that they found the personal financial adviser or planner important, whereas 44.0 percent of respondents with postgraduate qualifications rated them as important for their superannuation education. Therefore, postgraduate qualified respondents place less importance on the financial adviser or planner than the other two groups

(undergraduate qualification and no undergraduate qualification). This evidence reveals that the less educated respondents are more likely to find the financial adviser or planner important to their superannuation needs than the more highly educated.

Table 6.43 Cross-tabulation of Importance Placed on Personal Financial Adviser or Planner by Qualification

Level of Qualification	Personal Financial Adviser or Planner			Row Total
	Little/No Importance	No Opinion	Important	
No Undergraduate	7	6	27	40
	17.5%	15.0%	67.5%	100.0%
Undergraduate	9	7	26	42
	21.4%	16.7%	61.9%	100.0%
Postgraduate	81	63	113	257
	31.5%	24.5%	44.0%	100.0%
Total	97	76	166	339

Chi-Square = 10.899 P = 0.028*

Table 6.44 shows strong statistical significance for educational training in investment and finance and the importance placed on the personal financial adviser or planner (p =0.008). Those without educational training in investment and finance are more likely to find the personal financial adviser or planner more important for superannuation education requirements than those with educational training in investment and finance Table 6.44 indicates that 53.4 percent of those without previous educational training in investment and finance placed importance on a personal financial adviser or planner for their superannuation education requirements, whereas 37.0 percent of those with educational training in finance and investment indicated importance. Consistent with previous findings on the financial adviser or planner, those respondents with less finance and investment knowledge are more likely to rate this educational resource as important.

Table 6.44 Cross-tabulation of Importance Placed on Personal Financial Adviser or Planner by Educational Training in Finance and Investment

Educational Training in Finance and Investment	Personal Financial Adviser or Planner			Row Total
	Little/No Importance	No Opinion	Important	
Yes	37	21	34	92
	40.2%	22.8%	37.0%	100.0%
No	60	55	132	247
	24.3%	22.3%	53.4%	100.0%
Total	97	76	166	339

Chi-square = 9.671 P = 0.008*

Statistical significance was shown in Table 6.45 for those groups indicating different levels of knowledge in finance and investment matters and the lack of importance they placed on the personal financial adviser or planner (p=0.077). The interpretation here differs from previous discussions where statistical significance was found. In this case, both groups had a similar opinion when it came to rating the personal financial adviser or planner as important, but what was significant, was the difference between the groups when they rated the personal financial adviser or planner as having little or no importance. Table 6.45 reveals that those with moderate or substantial knowledge were more likely to place little or no importance on personal financial adviser or planner for their superannuation education than those with little or no knowledge. It is shown in that 33.3 percent of those respondents in the moderate or substantial knowledge category indicated little or no importance on the personal financial adviser or planner for their educational needs, whereas 23.0 percent of those respondents with little or no knowledge rated it to have little or no importance.

Table 6.45 Cross-tabulation of Importance Placed on Personal Financial Adviser or Planner by Knowledge in Finance and Investment Matters

Knowledge in Finance and Investment Matters	Personal Financial Adviser or Planner			Row Total
	Little/No Importance	No Opinion	Important	
None or Little	31	36	68	135
	23.0%	26.7%	50.4%	100.0%
Moderate/Substantial	66	38	94	198
	33.3%	19.2%	47.5%	100.0%
Total	97	74	162	333

Chi-square = 5.120 P = 0.077*

A statistically significant relationship (p=0.001) was found for area of employment and the importance placed on the personal financial adviser or planner (Table 6.46). Non-academics were more likely to find the personal financial adviser or planner important for their superannuation education requirements than academics. Table 6.46 indicates that 63.6 percent of non-academics found the personal financial adviser or planner important, whereas 43.2 percent of academics found it important. Academics therefore place less importance on personal financial advisers or planners for superannuation education compared to non-academics.

Table 6.46 Cross-tabulation of Importance Placed on Personal Financial Adviser or Planner by Area of Employment

Area of Employment	Personal Financial Adviser or Planner			Row Total
	Little/No Importance	No Opinion	Important	
Academic	81	56	104	241
	33.6%	23.2%	43.2%	100.0%
Non- Academic	15	20	61	96
	15.6%	20.8%	63.6%	100.0%
Total	96	76	165	337

Chi-Square = 13.800 P = 0.001*

Table 6.47 reveals a statistically significant result for superannuation account balance, and the importance placed on personal financial adviser or planner (p = 0.050). Those groups which have more than $500,000 in their superannuation are more likely to find

the personal financial adviser or planner important for their superannuation education requirements than those with lower balances. The group that indicated they did not know their balance are the least likely to find the personal financial adviser or planner important for their superannuation education. Table 6.47 shows that the group with an account balance of more than $500,000 found the most importance in the personal financial adviser or planner (58.2 percent), followed by the less than $100,000 group (49.5 percent), and then the $100,000 to $500,000 group (47.6 percent). Only 27.8 percent of the balance unknown group indicated importance for the personal financial adviser or planner for their superannuation information requirements.

Table 6.47 Cross-tabulation of Importance Placed on Personal Financial Adviser or Planner by Superannuation Account Balance

Superannuation Account Balance	Personal Financial Adviser or Planner			Row Total
	Little/No Importance	No Opinion	Important	
Less than $100,000	22	29	50	101
	21.8%	28.7%	49.5%	100.0%
$100,000 to $500,000	50	36	78	164
	30.4%	22.0%	47.6%	100.0%
More than $500,000	18	5	32	55
	32.7%	9.1%	58.2%	100.0%
Balance Unknown	7	6	5	18
	38.9%	33.3%	27.8%	100.0%
Total	97	76	165	338

Chi-Square = 12.605 P = 0.050*

6.4.5.5 Differences between Groups with Respect to the Importance Placed on Friends and Colleagues

Tests of independence (Chi-square) were again utilised to establish whether any statistically significant differences existed in the responses of the demographic or background group categories when it came to the importance they placed on friends and colleagues for their superannuation decisions. No significant relationships were found for gender, age, qualifications, employment history in finance and investment, attitude towards investment risk, and area of employment. The following analysis

focuses on those groups where significant differences in response categories were established.

Table 6.48 indicates strong statistical significance for educational training in investment and finance and the importance placed on friends and colleagues (p = 0.067). Those without educational training in investment and finance are more likely to find friends and colleagues more important for their superannuation education requirements than those with educational training in investment and finance. Table 6.48 indicates that 59.7 percent of those without previous educational training in investment and finance placed importance on friends and colleagues for their superannuation education requirements, whereas 50.0 percent of those with educational training in finance and investment indicated importance for friends and colleagues.

Table 6.48 Cross-tabulation of Importance Placed on Friends and Colleagues by Educational Training in Finance and Investment

Educational Training in Finance and Investment	Friends and Colleagues			Row Total
	Little/No Importance	No Opinion	Important	
Yes	22	24	46	92
	23.9%	26.1%	50.0%	100.0%
No	62	38	148	248
	25.0%	15.3%	59.7%	100.0%
Total	84	62	194	340

Chi-square = 5.398 P = 0.067*

Statistical significance is revealed in Table 6.49 for those groups indicating different levels of knowledge in finance and investment matters and the importance they placed on the personal financial adviser or planner (p=0.091). Those with little or no knowledge were more likely to place more importance on friends and colleagues for their superannuation education than those with moderate or substantial knowledge. Table 6.49 shows that 62.8 percent of those respondents with little or no knowledge indicated friends and colleagues as important for their superannuation educational needs, whereas 53.0 percent of those respondents with moderate or substantial knowledge rated friends and colleagues to be important.

Table 6.49 Cross-tabulation of Importance Placed on Friends and Colleagues by Knowledge in Finance and Investment Matters

Knowledge in Finance and Investment Matters	Friends and Colleagues			Row Total
	Little/No Importance	No Opinion	Important	
None or Little	26	25	86	137
	19.0%	18.2%	62.8%	100.0%
Moderate/Substantial	58	35	105	198
	29.3%	17.7%	53.0%	100.0%
Total	84	60	191	335

Chi-square = 4.799 P = 0.091*

A significant result (p=0.022) was obtained for superannuation account balance, and the importance placed on friends and colleagues (Table 6.50). The group with an account balance less than $100,000 are more likely to find friends and colleagues more important for their superannuation education requirements than those with higher account balances. Table 6.50 reveals that the group with the less than a $100,000 account balance found by far the most importance in friends and colleagues (70.9 percent), followed by the balance unknown group (55.6 percent). There was no substantial difference between the other two groups on the importance they placed on friends and colleagues.

Table 6.50 Cross-tabulation of Importance Placed on Friends or Colleagues by Superannuation Account Balance

Superannuation Account Balance	Friends and Colleagues			Row Total
	Little/No Importance	No Opinion	Important	
Less than $100,000	13	17	73	103
	12.6%	16.5%	70.9%	100.0%
$100,000 to $500,000	50	30	84	164
	30.5%	18.3%	51.2%	100.0%
More than $500,000	16	12	26	54
	29.6%	22.2%	48.2%	100.0%
Balance Unknown	5	3	10	18
	27.8%	16.6%	55.6%	100.0%
Total	84	62	193	339

Chi-Square = 14.735 P = 0.022*

6.5 Summary

This chapter deals with statistical inferences that were drawn from the research data analysed in Chapter Five. Tests of significance such as ANOVA and chi-square were used to test for significant differences in the responses provided by different demographic groups. Consideration was given to the chance of erroneous conclusions being reached from the significance tests, and a decision was made to adopt a significance level of 10 percent to produce a balance between rejecting a finding when it is true and accepting a finding when it is false.

Analysis of Variance, t-tests and F-tests were used to establish any significant differences in the mean responses of the various demographic groups to questions relating to the experiences of those respondents who used the superannuation fund provided educational information. Significant differences in mean responses to a number of educational information sources were prominent for academics and non-academics. A few significant results were obtained for differences in mean responses for groups with different qualification levels, and those groups with and without educational training in finance and investment. No significant results were obtained for gender, age, perceived investment knowledge, and investment attitude to risk. It is therefore of importance to note that non-academics were likely to feel more informed by a number of educational resources than academics. Also important was that a respondent's level of education and whether they had any formal educational training in investment and finance impacted on their perception of being informed by some of the educational resources.

Chi-square tests of independence were then used to determine whether demographic or background group categories were statistically significant when it came to attending educational seminars, accessing the website, reading superannuation fund provided written communications, and using the superannuation fund sponsored financial counselling. The superannuation account balance, gender, and perceived knowledge in investment and finance matters were the most significant factors when it came to accessing the superannuation fund educational resources. Other contributing significant factors were age, educational training in finance and

investment, and attitude towards investment risk. Level of qualification, area of employment, and previous employment in finance and investment were of less significance when it came to utilising the superannuation fund provided educational information.

Further chi-square tests of independence were performed to determine any significant relationships between the demographic and background characteristics of respondents against the importance they placed on other non-superannuation fund educational resources for their superannuation information requirements (newspaper publications, financial magazines, radio and television, personal financial adviser or planner, and friends and colleagues). The superannuation account balance, perceived knowledge in investment matters, educational training in finance and investment, and level of qualification produced the most significant results when it came to the level of importance placed on this non-superannuation fund provided information. Only a few significant results were obtained for attitude to risk, area of employment, and previous employment in finance and investment and, and no significant results were obtained for age.

Chapter Seven

Summary and Conclusions

7.1 Introduction

The purpose of this study was to evaluate a financial education model to see whether it provides superannuation defined contribution fund members with the required information and resources to enable them to make informed investment choices regarding their superannuation investment funds and, further, to determine the importance they placed on this information for their overall decision making. Using the OECD (2005) definition of financial education, an evaluation was undertaken to establish the role superannuation fund supplied financial education plays in providing advice, information and instruction to fund members about their superannuation savings and investment strategies. Furthermore, the research determined the extent to which the superannuation fund educational resources were used by members and the possible reasons explaining why they failed to use these resources. The investigation also determined the importance superannuation fund members placed on non-superannuation fund educational sources such as radio and television, financial newspapers and magazines, friends and colleagues and financial planners or advisers, for their superannuation decision making.

The study was motivated by the growing literature that suggests that a substantial number of Australians lack adequate levels of financial literacy to structure a retirement savings plan properly. Indeed, survey evidence suggests that many Australians are not adequately saving for retirement and that a number of groups within the community will not accumulate sufficient funds to provide them with a comfortable retirement lifestyle. A review of the relevant literature confirmed that many individuals fail to save for retirement in a rational way as prescribed by the Modigliani and Brumberg (1954) economic life-cycle model. Numerous studies show that many individuals exhibit irrational behaviour when it comes to planning and saving for retirement. The literature review identified that exposure to financial education programs can positively influence the planning and savings behaviour of

retirement fund members. Prior research also indicated that educational seminars or workshops, written communications, website information and financial counselling were all effective methods in communicating financial educational information to individuals. The research model developed in Chapter Three (Figure 3.4), incorporates these educational resources. Research data were gathered to determine whether superannuation fund members thought they were being informed when they accessed this generic and specific educational information.

A brief review of each chapter is provided in the next section. The major findings of this study are presented in the third section of this chapter. The fourth and fifth sections of this chapter cover the contributions and implications of the research. The sixth section summarises the limitations of this study, and in the final section some opportunities for future research are discussed.

7.2 Review of the Thesis

The background to the research, the research problems and objectives, the scope and justification for the research and the research methodology were introduced in Chapter One. An overview of the Australian superannuation framework was provided in Chapter Two to inform the reader on specific issues shaping Australia's retirement income system and Australia's superannuation system including its composition and size. Regulation and taxation of the superannuation system were also discussed. A consideration of the implications of Australia's ageing population was provided and the adequacy of Australian superannuation savings was assessed. Specific issues on the financial performance of the superannuation industry were discussed with further reference to the global financial crisis and the United States (US) defined contribution retirement fund system.

The relevant literature was presented in Chapter Three. The theoretical life-cycle model (Modigliani & Brumberg 1954) which assumes rational economic decision making by individuals was described and evidence of its relevance to retirement saving assessed. The behavioural research evidence indicates that individuals exhibit irrational characteristics when it comes to saving and investing for their retirement.

The behavioural life-cycle theory suggests that individuals will deviate from the standard economic model because they have limited cognitive abilities to solve the multi-period retirement saving problems (branded 'bounded rationality') and further, they lack the necessary willpower to execute a long-term retirement savings plan (Shefrin 2002). Surveys indicate a low level of adult financial literacy in Australia (ANZ 2008; Mercer 2006). It was suggested that those with more financial knowledge are more likely to plan for retirement (Lusardi & Mitchell 2006). Inertia and procrastination in decision making appear to be behavioural influences that inhibit the retirement savings behaviour of individuals (Madrian & Shea 2001a; Choi et al. 2002; Gallery & Gallery 2005). Other behavioural influences such as heuristics, decision framing and loss aversion were also identified as behavioural influences that can potentially inhibit rational decision making. A theoretical framework for superannuation fund investment choice was introduced and summarised in Figure 3.1. The framework depicts informed investor choice as a prerequisite to maximising retirement income (Brown, Gallery & Gallery 2002). The framework also recommends education programs as a policy resolution for those superannuation fund members prepared to actively engage in decisions regarding their retirement savings. Financial education was explained and the rationale for adopting the OECD (2005) definition for the purpose of this study was presented. It was shown that different types of financial education programs do change retirement savings behaviour (Bayer, Bernheim & Scholz 1996; Clark & Schieber 1998; Lusardi 2005; Clark et al. 2006). Educational seminars or workshops, written communications, website information and financial counselling were all found to be effective educational tools in this process. The research framework was then presented and the research model and questions were developed.

The research methodology was introduced in Chapter Four. The research paradigm was discussed and a quantitative survey approach was adopted to assemble data necessary to address the research questions. After consideration of the main data collection methods, the sample size, the geographically dispersed sample, and with further guidance from the Trochim (2006) framework, a decision was made to use an electronic questionnaire (web-based survey). A discussion of the process of construction of the questionnaire, including layout, question content, response format, question format and the order of questions was provided. Issues relating to how the

questionnaire was written, the pilot test and the administration of the survey were also discussed. How the questionnaire was written, the pilot test, and administration of the survey were also discussed. Various issues regarding the selection of the sample were reviewed, and measurement issues impacting on the reliability and validity of the survey were addressed.

The quantitative data analysis of the descriptive statistics was addressed in Chapter Five and the quantitative data analysis of the inferential statistics was addressed in Chapter Six. In the descriptive analysis chapter, demographic and background information on the respondents was presented and discussed. In addition, frequency distributions, means and standard deviations of responses to the rating measurement scales for the various educational resources (educational seminar, website, written communications and financial counselling) were presented along with the respondents' rating of reasons why they fail to use these resources. The importance placed by respondents on non-superannuation fund educational information for their investment decision making was also presented. In Chapter Six the inferential analyses establishing any significant differences in the responses to questions from the different demographic and background groups were presented. The implications of the results found in Chapter Five and Chapter Six are discussed in the next section.

7.3 Major Findings

This study investigates the views, opinions and perceptions of superannuation fund members in regard to the different elements of financial educational resources made available to them through the superannuation fund and through other sources. Chapter Five presented the descriptive analysis that addressed research questions one to six which were detailed in Chapter Three (Table 3.1). The inferential statistical analysis was reported in Chapter Six and the results relating to research questions seven to nine were discussed.

7.3.1 Educational Seminar

Table 7.1 Educational Seminar Research Questions and Findings

Question 1: What is the users' perception of the presentation of information in educational seminars?
The information was well communicated and presented.
Question 1A: To what extent do users feel they are informed by the seminars?
Users were being informed by the educational seminars.
Question 1B: Do users place importance on the educational seminar when it comes to their superannuation decision making?
Users do place importance on the educational seminar for their superannuation decisions.
Question 1C: How frequently do users attend the educational seminars?
Most users do not frequently attend educational seminars.

The results are summarised below.

Research questions 1, 1A, 1B and 1C presented in Table 7.1 relate to the superannuation fund provided educational seminar. Educational seminars which cover more specific superannuation issues are usually scheduled throughout the year and are accessible by Unisuper superannuation fund members in their workplace. It was found that 43.6 percent of respondents had previously attended an educational seminar. This result is consistent with Clark-Murphy and Gerrans (2001) who found a similar attendance level at educational seminars in their study of Australian university superannuation fund members. Evidence provided by Helman and Paladino (2004) also found similar attendance rates at retirement educational seminars by US workers.

The respondents in this study rated the presentation of information in seminars highly, and the study results indicate agreement among most respondents that they were being informed by the content presented in the seminars. These results are consistent with the findings of Kim, Bagwell and Garman (1988) who reported a high rating of both the presentation and content of a workplace seminar by US corporate employees. In the current study it was found that a large majority of respondents who attended a seminar rated it as important for their superannuation decision making. This is consistent with the Clark-Murphy and Gerrans (2001) study where a substantial number of respondents rated the seminar as the most important source of information when making a superannuation related decision. While the current study found that most respondents do not frequently attend seminars, the evidence compiled suggests

that those who do attend generally perceive that as a result they become informed about superannuation issues. In light of these results, it is recommended that superannuation fund managers broaden their seminar offerings to their members to include a variety of superannuation topics targeting specific groups of members. This should be done through a seminar awareness campaign that emphasises the importance of the seminar information to those members who have a lack of knowledge on superannuation matters.

7.3.2 Superannuation Fund Website

Table 7.2 Superannuation Website Research Questions and Findings

Question 2: To what extent do users feel they are informed by the range of sponsor provided web-based educational information?
Users were being informed by accessing the superannuation fund website.
Question 2A: What importance is placed on sponsor provided web-based educational information when it comes to the fund member's superannuation information requirements?
Recent and future return performance, the potential for investment risk and financial calculators were rated by users as the most important website items.
Question 2B: Do users place importance on the information provided on the superannuation fund website for their decision making?
Users do place importance on the superannuation fund website for their decision making.
Question 2C: How frequently do users access the superannuation fund provided website?
Most users do not frequently access the superannuation fund website.

The results are summarised below.

Research questions 2, 2A, 2B and 2C presented in Table 7.2 relate to the superannuation fund website. It was found that 61.5 percent of respondents had previously accessed the website. This finding is not consistent with the findings of Clark-Murphy and Gerrans (2001) and Helman and Paladino (2004) who found low usage of online information from those receiving retirement savings educational materials. The results in this study may be signalling a changing pattern in website usage for the information requirements of superannuation fund members. The overall mean rating of the website by respondents indicates that a majority of them agree that they are being informed by the web-based educational information. Furthermore, a large majority of respondents indicated that the website was important for their superannuation decision making and provided support for Nyce's (2005) findings that

web-based financial communications had a significant impact on US employee participation in 401(k) plans, and that internet based software influenced retirement knowledge (Loibl & Hira 2006). Website information on return performance, expected future return performance and the potential risk of superannuation fund offered investment options was rated as the most important website based financial information. Financial calculators were also deemed by many respondents as an important information resource. The evidence suggests that those members who do access the website generally believe that they are being informed about superannuation matters. It is therefore important that the superannuation fund make members aware of both the existence and the importance of the educational resources available on their website. The findings suggest that more needs to be done in this regard.

7.3.3 Superannuation Fund Written Communications

Table 7.3 Superannuation Fund Written Communications Research Questions and Findings

Question 3: To what extent do users feel they are informed by reading the written communications provided by the superannuation fund?
Users were being informed by reading the written communications.
Question 3A: Do users place importance on superannuation fund provided written communications for their decision making?
Users do place importance on written communications for their superannuation decisions.
Question 3B: How frequently do the users access the written communications provided by the superannuation fund?
The written communications were used frequently by a majority of respondents and were used much more frequently than the other educational resources.

The results are summarised below.

Research questions 3, 3A and 3B presented in Table 7.3 relate to superannuation fund provided written communications. It was found that almost 70 percent of respondents read the written communications. This result confirms the findings of Clark-Murphy and Gerrans (2001) who found that a very large number of superannuation fund members read the written communications before making a superannuation related decision. In a US study Helman and Paladino (2004) also found that a majority of

workers used written communications for their retirement educational needs. A majority of respondents in the current study rated most written communication items as important when it came to being informed about superannuation issues, and for their superannuation decision making. This result is consistent with the Clark-Murphy and Gerrans (2001) study where it was found that a majority (53 percent) of superannuation fund members found the written communications to be the most important information resource when it came to making a superannuation decision. Furthermore, Loibl and Hira (2006) concluded that US workers found written communications contributed to employee retirement saving knowledge. The current study also found that written communications were referred to more by superannuation fund members than the other superannuation provided educational resources. The evidence on written communication indicates that it is highly utilised and generally leads to superannuation fund members becoming informed on superannuation issues. Given the widespread use of the written communications by superannuation fund members, an opportunity exists for the superannuation fund to supplement the educational material in the written communications with further information about the other educational resources available to members (such as the website).

7.3.4 Superannuation Fund Provided Financial Counsellor

Table 7.4 Educational Seminar Research Questions and Findings

Question 4: What is the users' perception of the communication of information provided by the financial counsellor?
Users believed the information was well communicated.
Question 4A: To what extent do users feel they are informed by accessing the financial counsellor?
Users believed that they were being informed by accessing the financial counselling.
Question 4B: Do users place importance on superannuation fund provided financial counselling for their decision making?
Users do place importance on financial counselling for their superannuation decisions.
Question 4C: How frequently do users access the financial counselling provided by the superannuation fund?
The financial counselling was the least frequently used educational resource.

The results are summarised below.

Research questions 4, 4A, 4B and 4C presented in Table 7.4 relate to the superannuation fund provided financial counsellor. Almost 20 percent of respondents indicated that they received superannuation fund provided financial counselling. This result was consistent with Clark-Murphy and Gerrans (2001) who also found that a low percentage of Australian university superannuation fund members consulted with the superannuation fund representative when making a superannuation fund related decision. However, in the US Helman and Paladino (2004) found a large number of workers accessed an employer or retirement fund provided financial planner for their retirement savings educational requirements.

When it came to rating the usefulness of the financial counselling, a large majority of respondents to this question perceived the counsellor to be a good communicator of information and the counsellor's advice led respondents to being informed on superannuation issues. A large percentage of those respondents (80.3 percent) using the financial counselling service indicated that they placed importance on the financial counselling for their decision making. This result is consistent with Helman and Paladino (2005) who found that individual access by US workers to a financial planner was rated as the most helpful resource when it came to improving their knowledge of retirement savings issues. In the current study it was found that the financial counselling service was the least used superannuation fund provided educational resource. However, given the specific nature of the educational information provided by the financial counsellor, those who access the resource generally rate it highly and therefore it constitutes an important element of the superannuation educational model.

7.3.5 Implications for the Educational Model

The findings in respect of users' perceptions of the educational resources indicate that the resources are generally informative on superannuation issues. However, not all the resources are being used by all respondents. Written communications was the most utilised educational resource followed by the superannuation fund website,

educational seminar and the financial counselling. All the educational resources were considered by most respondents to be important for their superannuation decision making. The written communications were also the most frequently accessed educational resource followed by the website, educational seminar and financial counselling (see Diagram 5.1). It can therefore be concluded that use of the superannuation educational resources described in the educational model (see Figure 3.4) leads to a user belief of being informed by that information, and that users place importance on this information when it comes to making their superannuation decisions. That is, the study results have validated the educational model. Therefore, it can be said that the educational model is appropriately structured to provide defined contribution fund members with resources that are perceived to be informative on superannuation issues. The implications that follow include that superannuation fund managers should ensure that they have an awareness of the superannuation education model in order to appropriately structure their educational offerings.

7.3.6 Reasons Superannuation Fund Members Fail to Access Educational Resources

Table 7.5 Research Question and Findings on Reasons for the Failure to Utilise Educational Resources

Research Question 5: What are the reasons why superannuation fund members fail to attend the educational seminar, and why they fail to access the superannuation fund provided website, written communications and financial counsellor?
The most important reasons for not utilising the educational resources were a lack of time, a lack of motivation, and that information was obtained from other sources.

The results are summarised below.

Research question 5 presented in Table 7.5 relates to reasons superannuation fund members fail to access educational resources. As previously indicated in this study some of respondents failed to access all of the educational resources provided by the superannuation fund. The results show that the most utilised resource was the written communications, followed by the website, seminars and financial counselling. When respondents were asked to rate a set of reasons for their failure to access these educational resources, it was found that the statements relating to a lack of time, a

lack of motivation and to obtaining information from other sources received the most agreement. In particular, a lack of motivation and not finding time to become informed on superannuation matters are consistent with the behavioural literature on inertia and procrastination (Gallery & Gallery 2005). However, it is reasonable to expect that not all respondents will access all the superannuation provided resources and may instead select alternative convenient or preferred resources to satisfy their information needs.

7.3.7 Other Sources of Superannuation Fund Educational Information

Table 7.6 Research Question and Findings on the Importance Placed on Non-superannuation Fund Provided Educational Resources

Research Question 6: What is the importance placed by superannuation fund members on other non-superannuation fund provided sources of educational information?
Many respondents place importance on other non-superannuation fund provided educational sources. Friends and colleagues were rated by respondents as the most important source followed by newspaper publications, personal financial planner/adviser, financial magazines, and radio and television.

The results are summarised below.

Research question 6 presented in Table 7.6 relates to the importance placed by superannuation fund members on non-superannuation fund sources of educational information. Five sources of information were investigated: newspaper publications; financial magazines; radio and television; personal financial adviser or planner; and friends and colleagues. Respondents rated information from friends and colleagues as the most important resource for their educational needs followed by newspaper publications, personal financial adviser or planner, financial magazines, and radio and television. Clark-Murphy and Gerrans (2001) also found that a large percentage (49 percent) of the respondents to their study consulted with colleagues when making a superannuation decision; and, Duflo and Saez (2002) confirmed that respondents placed high importance on advice from their colleagues when it came to decisions on retirement savings. Hilgert, Hogarth and Beverly (2003) found evidence that US households prefer to receive financial information through newspaper publications. This research evidence suggests that individuals utilise other non-superannuation fund

information sources and that they also place importance on this information for their superannuation educational requirements. Accordingly, its inclusion in the superannuation education model is justified as it provides another avenue for superannuation fund members to become informed on superannuation matters.

7.3.8 Group Differences in Mean Responses

Table 7.7 Research Question and Findings on the Group Differences in Mean Responses

Research Question 7: Do any significant differences exist between groups in respect of mean responses on the usefulness found in superannuation fund provided educational resources?
Statistically significant differences were found for the following: those with and without employment history in investment and finance; those with and without formal educational training in investment and finance; academics and non-academics; and, differing education level. Overall there were not many differences among group ratings on the usefulness of the educational resources.

A summary of the results is provided below.

No statistically significant differences were found between males and females for their mean ratings of the superannuation fund educational information. The only statistically significant difference between the mean responses to the educational items for those with and without employment history in investment and finance was for being 'informed by the website'. Those with employment history in investment and finance rated the website more highly than those without such employment experience. Statistically significant differences were also found in the mean responses for seminar presentation and, informed by the website, for those groups with and without formal educational training in investment and finance. The group with formal educational training rated the seminar presentation more highly and the group without this educational training rated the information received on the website more highly.

No statistically significant differences were found between the mean ratings of educational items for those with little or no knowledge against those with moderate or substantial knowledge in investment matters. Statistically significant results were found between academics and non-academics for their mean responses to seminar

presentation, informed by seminar, informed by the website and informed by written communications. Non-academics rated all of these items more highly than academics.

No statistically significant differences were found for mean responses based on age. Significant differences were found with respect to education for mean responses to both informed by seminar and, informed by website. There was a significant difference in mean responses to informed by seminar between the postgraduate qualified and the undergraduate qualified groups, and for mean responses for informed by website between the postgraduate qualified and no undergraduate qualification groups. No statistical differences were found for the mean responses for the groups with different attitudes to risk; and, one statistically significant result was obtained for the mean responses to seminar presentation between groups with different superannuation account balances.

7.3.9 Group Differences in Accessing Superannuation Fund Provided Educational Resources

Table 7.8 Research Question and Findings on Group Differences in the Use of Superannuation Fund Provided Educational Resources

Research Question 8: Do any significant differences exist between groups in respect of utilising the superannuation fund provided educational resources?
A significant finding was that males were more likely than females to engage with all educational resources than except for financial counselling. Also those with higher investment and finance knowledge and those with a more aggressive attitude to investment risk were more likely to utilise more of the educational resources than those with less knowledge. This was also the case for those with higher superannuation account balances.

These findings provide important new evidence as to which groups of defined contribution fund members are more likely to use the educational resources. A summary of the results is provided below.

It was found that males were more likely to attend an educational seminar than females and that older superannuation fund members were more likely to attend the seminar than younger members. Statistical testing indicated that those with moderate or substantial knowledge of finance and investment matters were more likely to attend

the seminar than those with little or no knowledge. Non-academics were more likely to attend a seminar than academics, and those with higher account balances in their superannuation accounts were also more likely to attend a seminar than those with lower account balances.

Further tests of statistical independence indicated that males were more likely to access the superannuation fund website than females; and those with employment history in investment and finance were more likely to access the website than those without such employment history. Those with educational training in investment and finance were more likely to access the website than those without such training; and those with moderate or substantial knowledge in investment matters were more likely to access the website than those with little or no investment knowledge. Respondents with an aggressive attitude to investment risk were also more likely to access the website than those with a neutral or conservative approach, and those with higher account balances in their superannuation account are more likely to access the website than those with lower account balances.

Statistical testing showed that males are more likely to read the superannuation written communications than females; and, those with educational training in investment and finance were more likely to read the written communications than those without such training. Those respondents with moderate or substantial knowledge in investment matters were more likely to read the written communications than those with little or no knowledge in these matters; and respondents with an aggressive attitude to investment risk were more likely to read the written communication than those with a neutral or conservative approach. It was also found that respondents with high superannuation account balances were more likely to read the written communications than those with relatively lower balances. Further, statistical testing indicated that the older age groups are more likely to access financial counselling than the younger age groups; and that those respondents with higher superannuation account balances are more likely to receive financial counselling than those with lower account balances.

The research identifies the following superannuation fund member groups as less likely to engage with these educational resources: females, those with little or no

knowledge in finance and investment matters, younger age groups and those with low superannuation balances. Accordingly, it is strongly recommended that educational programs be specifically tailored and targeted to these groups so that they can receive the appropriate education on superannuation matters. It is vital that these groups receive educational information on superannuation issues given that the review of the literature identified them as most at risk of not accumulating sufficient retirement savings.

7.3.10 Group Differences in Respect of the Importance Placed on Non-Superannuation Fund Educational Resources

Table 7.9 Research Question and Findings on the Group Differences in the Importance Placed on Non-superannuation Educational Resources

Research Question 9: Do any significant differences exist between groups in respect of the importance they place on non-superannuation fund provided educational resources?
The important findings were that females, those groups that are less educated and those having a lower awareness of investment and finance matters were more likely to find the financial planner/adviser and friends and colleagues more important to their superannuation decisions. Males, the more highly educated, and those with greater knowledge in investment and finance matters were more likely to find newspaper publications and financial magazines more important to their superannuation decisions.

A summary of the results is provided below.

It was found that males were more likely to place greater importance on newspaper publications for their superannuation education than females; and those with postgraduate or undergraduate qualifications placed more importance on newspaper publications for their superannuation education than those with no undergraduate qualification. Those with moderate or substantial knowledge in investment matters were more likely to place higher importance on newspaper publications than respondents with little or no knowledge in these matters; and, those with an aggressive attitude to investment risk were more likely to place more importance on newspaper publications for their superannuation education than those with a neutral or a conservative attitude to investment risk. Respondents with higher superannuation account balances were also likely to place more importance on newspaper publications for their superannuation education than those with lower balances.

Statistical testing indicated that males were more likely to place more importance on financial magazines for their superannuation education than females; and, those with postgraduate qualifications were less likely to place importance on financial magazines for the superannuation education than those with undergraduate qualifications. Further, those with an employment history in investment and finance were more likely to find financial magazines important for their superannuation education than those without such employment history; and, those with educational training in finance and investment were more likely to find financial magazines important for their superannuation education than those without this education. It was also found that those with moderate or substantial knowledge in investment matters were more likely to find financial magazines important for their superannuation education than those with little or no knowledge in these matters; and, non-academics were also likely to find financial magazines more important than academics. Respondents that did not know their superannuation account balance were less likely to find financial magazines important for their superannuation education than those who knew their account balance. Only one statistically significant result was obtained for importance placed by respondents on radio and television. It was found that both those with a conservative and those with an aggressive attitude to investment risk were more likely to find radio and television more important to their superannuation education than those with a neutral attitude.

In respect of the financial adviser/planner it was found that females were more likely to find the financial adviser/planner more important for their superannuation education than males; and, those with an undergraduate or no undergraduate qualification were more likely to find the financial adviser/planner important for their superannuation education than those with a postgraduate qualification. It was found that those without any educational training in investment and finance were more likely to find the financial adviser/planner important for their superannuation education than those with educational training; and, those with little or no knowledge in finance and investment matters were more likely to find financial adviser/planner important for their superannuation education than those with moderate or substantial knowledge. Also, non-academics were likely to find the financial adviser/planner more important for their superannuation education than academics; and, those with the highest superannuation account balances were likely to find the financial

adviser/planner more important for their superannuation education than those with lower account balances.

Further testing indicated that those without any educational training in finance and investment were likely to find friends and colleagues more important for their superannuation education than those with such training; and, those with little or no knowledge in finance and investment matters were likely to find friends and colleagues more important for their superannuation education than those with moderate or substantial knowledge. Those respondents with the lowest superannuation account balances were more likely to find friends and colleagues important for their superannuation education when compared to those with higher account balances.

7.4 Contributions of the Research

The main contribution of this study is the determination of whether superannuation fund provided education is perceived by defined contribution fund members as leading to more informed decision making in regard to their retirement savings. The superannuation education model specified in this study describes the educational resources that have been found to influence retirement fund members' behaviour. The results have validated the educational model, and have provided new evidence indicating that superannuation fund members are using the educational resources provided to them by their superannuation fund for information on their superannuation. The study also provides further new evidence as to how important these educational resources are to superannuation fund members' overall superannuation decision making, and how frequently these resources are utilised.

Moreover, new evidence was compiled to determine reasons why superannuation fund members fail to use the educational resources; and, the importance placed by defined contribution fund members on non-superannuation fund sources of superannuation education. Additional evidence from inferential statistical testing indicates which demographic groups are more likely to utilise the different educational resources available to them, and the differences in how these groups rated

the resources for their superannuation information requirements. Furthermore, evidence on the differences between demographic groups was established on the importance these groups placed on non-superannuation fund educational sources. Overall, this study takes a holistic approach as it provides evidence on the role the major superannuation education resources and other non-superannuation fund educational resources play in providing information to superannuation fund members.

7.5 Implications of the Study

This research identifies several groups of respondents who fail to engage with the financial education provided to them when it comes to managing their superannuation. Females, younger individuals, those with low superannuation balances or low knowledge of finance and investment matters were the key groups identified as less likely to utilise the educational information offered to them by the superannuation fund. These results are consistent with the literature that continually shows that women possess lower levels of financial knowledge than males and are therefore less likely to adequately plan for retirement (Lusardi 2005; Lusardi & Mitchell 2007a; ANZ 2008): and that females were more likely to find superannuation decisions more difficult than males (Clark-Murphy and Gerrans.2001; Clark-Murphy, Kristofferson & Gerrans 2002).

The implications that flow from this study include that by failing to utilise these educational resources females are at higher risk of not adequately solving the retirement savings problem and therefore not accumulating sufficient funds for retirement. It is strongly recommended that females are specifically targeted by governments and superannuation funds through both an awareness campaign and education programs that are tailored specifically for this demographic group.

Younger adults were also identified as having low financial awareness when it came to retirement savings (Lusardi & Mitchell 2006; ANZ 2008). It was acknowledged that there are difficulties associated with getting young individuals to adequately engage with their retirement savings because they perceive retirement to be something that is far too distant to consider and therefore place less value on it (hyperbolic

discounting, see Chapter 3 section 3.3.2. The government has instigated a taskforce to report on how education programs can better assist individuals in saving for retirement and, through the Australian Taxation Office, it has also instigated a program that allows individuals to search for any lost superannuation. However, more needs to be done by relevant stakeholder groups to ensure that younger Australians have an improving awareness of the importance of managing their superannuation. More needs to be done to ensure that younger groups understand that they will experience a less than comfortable retirement lifestyle if they do not generate the necessary savings. The future benefits associated with the adequate management of their superannuation funds throughout their working lives needs to be stressed to this group.

Further, the government and the superannuation industry needs to pursue and inform those less financially educated individuals on the need to plan for retirement with specifically targeted information and educational programs. Similar to gender, and the young, less financially literate individuals are at risk of not accumulating sufficient retirement savings and so superannuation education needs to be more directly targeted at better informing this group.

7.6 Limitations of the Study

This study contains several limitations that have been identified and discussed in earlier chapters, and which are summarised in this section. A purposive (judgement) sample was used to obtain responses. Purposive samples are not considered to be random samples as the sample is selected from a researcher's judgement as a representation of a population. The researcher's opinions of what constitutes a representative sample are likely to introduce some bias into the process. However, a carefully chosen purposive sample can be deemed to represent a population and, therefore, the results obtained from the study can be generalised. Purposive sampling was utilised in this study because generating a purely random sample was not possible.

With electronically mailed questionnaire surveys, response rate is a matter that can introduce response bias which may affect the reliability of the research data. Certain procedures were implemented in this study in an effort to maximise the response rate including ensuring that the questionnaire layout, wording and design was appropriate. As part of the mitigation process, the questionnaire was tested prior to its final administration. In addition, two reminder letters were sent and this resulted in an increase in the final response rate to 30.1 percent. The response rate compares favourably to the range of response rates achieved by electronic surveys (see section 4.4.1.2) and is deemed acceptable.

The results from this study have provided empirical evidence that superannuation fund provided educational resources are perceived by superannuation defined contribution fund members as generally contributing to them being more informed. These results were obtained within the context of superannuation fund members in a university industry fund and validity to members of other types of superannuation funds remains to be tested in future research.

7.7 Further Research

This study used a survey approach to determine superannuation fund members' perceptions of superannuation fund provided financial educational resources. Therefore, this study assesses members' perceptions of being informed. Future research could focus on what, if any, measurable member benefits arise from decision making resulting from exposure to the financial education resources considered in this study.

An evaluation of the educational program investigated in this study (seminars, website, written communications, and financial counselling) could also be undertaken to see whether it accords with models of best practice. Although it was beyond the scope of this study to examine the literature on adult education, this remains a fruitful area for future study: research could be conducted to see how 'best adult education' principles can be applied to superannuation fund sponsored financial education to achieve better learning outcomes for superannuation fund members. Saliterman and

Sheckley (2003) suggested that when research-based adult-learning principles are applied to retirement savings information, those receiving the information were much more likely to increase their retirement savings contributions.

There is a lack of research that focuses on how members of self-managed superannuation funds acquire financial knowledge. There is a proliferation of such funds in Australia (refer Table 2.2, Section 2.6) and targeting appropriate education to these fund members is of future economic importance as inadequate superannuation investment knowledge will inhibit the maximisation of retirement income for their members. An investigation of the educational resources that members of self-managed superannuation funds utilise as part of their decision making process is therefore warranted, and the importance they place on educational information for their decision making should also be investigated.

APPENDICES

APPENDIX ONE

QUESTIONNAIRE

1. Introduction

Thank you for taking the time to complete the survey. Your feedback is greatly appreciated. This survey will take approximately 15 minutes to complete. It is important to note that your responses to the survey will be completely anonymous.

In order to progress through this survey, please use the following navigation links:

-Click the Next >> button to continue to the next page.
-Click the previous << button to return to the previous page.
-Click the Submit >> button to submit your survey.

If you have any questions, please contact Michael Ntalianis on (03) 99195048 or at michael.ntalianis@vu.edu.au

2. Demographic Questions

1. What is your gender? Please click on the appropriate response.

O Male

O Female

2. What is your age? Please click on the appropriate response.

O 18-29

O 30-39

O 40-49

O 50-59

O 60+

3. What is the highest level of qualification you have completed since you left secondary school? Please click on the appropriate response.

O No Qualification

O Certificate

O Diploma

O Bachelors Degree

O Post Graduate Diploma

O Maters Degree

O Doctoral Degree

O Other (please specify)

4. Have you ever been employed in a job in which you became familiar with finance, investment analysis, share market investing or financial planning? Please click on the appropriate response.

O Yes

O No

5. Have you ever had any formal educational training in finance, investment, share market training or financial planning? Please click on the appropriate response.

O Yes

O No

6. How would you rate your knowledge of financial and investment matters? Please click on the appropriate response.

O No knowledge

O Little knowledge

O Moderate knowledge

O Substantial knowledge

7. How would you rate your attitude towards investment risk? Please click on the appropriate response.

O Conservative

O Moderately Conservative

O Neutral

O Moderately Aggressive

O Aggressive

8. How would you best describe your area of employment? Please click on the appropriate response.

O Academic

O Administration

O Library Services

O Human Resources

O Information Technology Services

O Building and Ground Maintenance

O Finance and Accounting Services

O Other (please specify)

3. Educational Seminars

The following section asks you to consider your attendance in educational seminars.

9. Have you ever attended an educational seminar provided by your superannuation fund? Please click on the appropriate response.

O Yes [Proceed to Question 10 by clicking on the next button]

O No [Proceed to Question 13 by clicking on the next button]

4. Educational Seminars

10. When attending a financial education seminar offered by your superannuation fund you would have received information, instruction or advice on superannuation issues. These seminars have the purpose of educating you so that you can make informed decisions regarding your superannuation. As a result of attending an educational seminar(s) please indicate, by clicking on the appropriate response, the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. The seminar was generally well presented	O	O	O	O	O
2. I was able to easily follow the material covered in the seminar	O	O	O	O	O
3. The participants were encouraged to ask specific questions	O	O	O	O	O
4. The presenters provided relevant feedback on the specific questions they were asked	O	O	O	O	O
5. The presenters provided understandable feedback on the specific questions they were asked	O	O	O	O	O
6. The issues overed in the seminar were consistent with my expectations	O	O	O	O	O
7. The seminar adequately covered all the necessary superannuation issues for me to gain a greater information on that topic	O	O	O	O	O
8. As a result of attending the seminar I am now able to make an informed decision on the specific superannuation issues addressed	O	O	O	O	O
9. Attending the seminar has provided me with a better understanding of the superannuation system	O	O	O	O	O
10. The seminar keeps me continually informed on changes in superannuation matters that impact on my investment decision making	O	O	O	O	O
11. Overall I believe that attending educational seminars has adequately met my educational investment decision making requirements	O	O	O	O	O

11. How important is the educational seminar when it comes to your superannuation information requirements? Please click the appropriate option.

	No Importance	Not Very Important	No Opinion	Moderately Important	Very Important
Educational Seminar	O	O	O	O	O

12. Please indicate how often you access your superannuation fund provided educational seminars. Please click on the appropriate response.

	Rarely	Sometimes	Often	Very Often
Educational Seminar	O	O	O	O

5. Educational Seminars

13. You indicated that you did not attend any investment seminars. Please indicate, by clicking on the appropriate response, the extent to which you agree or disagree with the following statements as an explanation for why you did not attend:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I have no awareness of the seminar program	O	O	O	O	O
2. I perceive no benefit from attending the seminar program	O	O	O	O	O
3. I perceive no relevance of the seminar topic to my superannuation decision making	O	O	O	O	O
4. I feel I already have the required knowledge to make informed superannuation decisions	O	O	O	O	O
5. I am not motivated enough to attend the seminars	O	O	O	O	O
6. I do not attend because of a lack of interest	O	O	O	O	O
7. I can utilise my time in more important issues	O	O	O	O	O
8. I am busy and do not have time to attend	O	O	O	O	O
9. I obtain my information requirements from other sources	O	O	O	O	O

6. Superannuation Fund Website

14. Have you accessed your superannuation fund sponsored website? Please click on the appropriate response.

O Yes [Proceed to Question 15 by clicking on the next button]

O No [Proceed to Question 19 by clicking on the next button]

7. Superannuation Fund Website

15. The website provides educational information, instruction and/or advice on issues relating to your superannuation. The intention for this website is to educate you on superannuation related issues so that you can make informed decisions regarding your investments. After accessing this website please indicate, by clicking the appropriate response, the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. The website informs me as to what I require in savings to adequately fund my retirement	O	O	O	O	O
2. The website allows me to make informed decisions when it comes to preparing an investment plan to meet my superannuation savings goal	O	O	O	O	O
3. The website allows me to make an informed assessment as to the adequacy of my current savings levels to meet my superannuation needs	O	O	O	O	O
4. The website informs me on how my investment choices will impact on my future superannuation savings	O	O	O	O	O
5. The web-based investment calculator provides me with the information I require to determine which investment choice will best meet my superannuation savings need	O	O	O	O	O
6. The web-based investment calculator provided me with the information I required to develop a superannuation investment plan	O	O	O	O	O
7. The website informs me on the concept of risk and how it applies to each investment choice offered by the fund	O	O	O	O	O
8. The website informs me on the potential returns produced by each investment choice offered by the fund	O	O	O	O	O
9. The website informs me on how my superannuation contributions are taxed	O	O	O	O	O
10. The website assists me to understand how my investment returns from my superannuation fund	O	O	O	O	O

are taxed					
11. The website assists me to understand how my superannuation savings will be taxed when I decide to retire	O	O	O	O	O
12. The website assists me to understand the impact of salary sacrificing on my superannuation savings	O	O	O	O	O
13. Overall I found that the range of available educational information on this website adequately meets my investment decision making requirements	O	O	O	O	O

16. How important is the superannuation fund provided website when it comes to your superannuation information requirements? Please click the appropriate option.

	No Importance	Not Very Important	No Opinion	Moderately Important	Very Important
Superannuation Fund Website	O	O	O	O	O

17. Please indicate how often you access your superannuation fund provided website. Please click on the appropriate response.

	Rarely	Sometimes	Often	Very Often
Superannuation Fund Website	O	O	O	O

8. Superannuation Fund Website

18. Please rate the importance of the following web-based items to your financial education requirements for informed decision making. Please indicate, by clicking on the appropriate response, the extent to which you find the following items important:

	No Importance	Not Very Important	No Opinion	Moderately Important	Very Important
1. Information on the return performance of the individual investment choices/options offered by the fund	O	O	O	O	O
2. Information on the characteristics of each investment option in relation to potential returns	O	O	O	O	O
3. Information on the characteristics of each investment option in relation to potential risks	O	O	O	O	O
4. Recent news items on superannuation related issues	O	O	O	O	O
5. Details on how to access personal financial planning advice	O	O	O	O	O
6. Information on the content and availability of educational seminars	O	O	O	O	O
7. Access to financial calculators	O	O	O	O	O
8. Access to superannuation generated publications such as the annual report of the superannuation fund, newsletters and other educational publications	O	O	O	O	O

9. Superannuation Fund Website

19. You indicated that you did not use the superannuation website. Please indicate, by clicking on the appropriate response, the extent to which you agree or disagree with the following statements as an explanation for why you did not use this site:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I have no awareness of the existence of a website	O	O	O	O	O
2. I perceive no benefit from accessing the website	O	O	O	O	O
3. I perceive no relevance of the information on the website to my superannuation decision making	O	O	O	O	O
4. I feel I already have the required knowledge to make informed superannuation investment decisions	O	O	O	O	O
5. Lack of motivation	O	O	O	O	O
6. Lack of interest	O	O	O	O	O
7. I am busy and do not have the time to visit the website	O	O	O	O	O
8. I obtain my information from other sources	O	O	O	O	O
9. I do not like using the website for my information	O	O	O	O	O
10. I do not have the necessary skills to use the website	O	O	O	O	O

10. Mailed Superannuation Fund Communications

20. Do you read the written communications (annual report to members and newsletters) mailed to you by the superannuation fund? Please click on the appropriate response.

O Yes [Proceed to Question 21 by clicking on the next button]

O No [Proceed to Question 24 by clicking on the next button]

11. Mailed Superannuation Fund Communications

21. You indicated that you read the communications provided by your superannuation fund manager. The material is a means by which the superannuation fund directly communicates with you on matters relating to your superannuation. These communications have the purpose of educating you so that you are informed about your superannuation. As a result of reading this material, please indicate, by clicking on the appropriate response, the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. The written communication informs me on the investment risks attached to the investment options offered by the superannuation fund	O	O	O	O	O
2. The written communication informs me on the investment returns generated by the investment options offered by the superannuation fund	O	O	O	O	O
3. The written communication informs me on recent developments in superannuation and the implications for my superannuation savings	O	O	O	O	O
4. The written communication informs me on the suitability of my current contributions to meeting my retirement savings requirements	O	O	O	O	O
5. The written communication assists me in making an informed choice in selecting appropriate investment options to meet my current requirements	O	O	O	O	O
6. The written communication informs me on the education and information services offered by the superannuation fund	O	O	O	O	O
7. I usually read thoroughly all sections of the mailed communications	O	O	O	O	O
8. I usually read thoroughly only specific sections of the mailed communications	O	O	O	O	O
9. Overall I found the range of available information in these written communications have informed my superannuation investment	O	O	O	O	O

decision making					

22. How important are the written communications mailed to you by the superannuation fund? Please click the appropriate option.

	No Importance	Not Very Important	No Opinion	Moderately Important	Very Important
Written Communications	O	O	O	O	O

23. Please indicate how often you read your superannuation written communications. Please click on the appropriate response.

	Rarely	Sometimes	Often	Very Often
Written Communications	O	O	O	O

12. Mailed Superannuation Fund Communications

24. You indicated that you did not read the written communications provided by the superannuation fund. Please indicate, by clicking on the appropriate response, the extent to which you agree or disagree with the following statements as an explanation for why you did not read this material:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I find the material provided is difficult to understand	O	O	O	O	O
2. The material provided is too lengthy	O	O	O	O	O
3. It takes too long to read through the material provided	O	O	O	O	O
4. I perceive little relevance of the material provided to my superannuation decision making	O	O	O	O	O
5. I am not motivated to read through the material provided	O	O	O	O	O
6. I am not interested in the material provided	O	O	O	O	O
7. I obtain my information from other sources	O	O	O	O	O

13. Financial Counsellor

25. Have you obtained financial advice from the superannuation provided financial counsellor? Please click on the appropriate response.

O Yes [Proceed to Question 26 by clicking on the next button]

O No [Proceed to Question 29 by clicking on the next button]

11. Mailed Superannuation Fund Communications

26. The purpose of the financial counselling is to ensure that you are appropriately informed about superannuation issues on your investments decisions. Please indicate, by clicking on the appropriate response, the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. The financial counsellor was a good communicator	O	O	O	O	O
2. The counselling advice was clear and understandable	O	O	O	O	O
3. The counsellor appeared to be knowledgeable	O	O	O	O	O
4. I had confidence in the advice I received from the financial counsellor	O	O	O	O	O
5. The counsellor was able to provide to me adequate advice on the issues I referred to them	O	O	O	O	O
6. I felt I had sufficient time with the counsellor	O	O	O	O	O
7. I felt encouraged to ask questions during the counselling session	O	O	O	O	O
8. I was able to make informed decisions on the superannuation issues I referred to the financial counsellor	O	O	O	O	O
9. Overall I found financial counselling contributed to me making an informed superannuation decision	O	O	O	O	O

27. How important is the superannuation fund provided financial counsellor when it comes to your superannuation information requirements? Please click the appropriate option.

	No Importance	Not Very Important	No Opinion	Moderately Important	Very Important
Financial Counsellor	O	O	O	O	O

28. Please indicate how often you access your superannuation fund provided financial counsellor. Please click on the appropriate response.

	Rarely	Sometimes	Often	Very Often
Financial Counsellor	O	O	O	O

12. Financial Counsellor

29. You indicated that you have not used the assistance of the financial counselling service provided by your superannuation fund. Please indicate, by clicking on the appropriate response, the extent to which you agree or disagree with the following statements as an explanation for why you did not use the counselling service:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I have no awareness of the financial counselling service	O	O	O	O	O
2. I perceive no benefit from using a financial counsellor	O	O	O	O	O
3. I do not feel it necessary to use the financial counselling service for my superannuation decisions	O	O	O	O	O
4. I do not feel comfortable speaking to a financial counsellor about my financial superannuation issues	O	O	O	O	O
5. I found that the other information provided was sufficient for me to make all my superannuation investment decisions	O	O	O	O	O
6. I do not use the financial counselling service because of a lack of interest	O	O	O	O	O
7. I do not use the financial counselling service because of a lack of interest	O	O	O	O	O
8. I do not use because of a lack of confidence in the financial counselling service	O	O	O	O	O
9. I am busy and do not have the time to speak to a financial counsellor	O	O	O	O	O
10. I obtain my information requirements from other sources	O	O	O	O	O

30. Please indicate the importance of these other sources of your superannuation educational needs. Please click on the appropriate response.

	No Importance	Not Very Important	No Opinion	Moderately Important	Very Important
Newspaper Publications	O	O	O	O	O
Financial Magazines	O	O	O	O	O
Radio/Television	O	O	O	O	O
Personal financial Adviser/Planner	O	O	O	O	O
Friends/Colleagues	O	O	O	O	O

31. Approximately what is the most recent dollar balance in your superannuation fund? Please click on the appropriate response.

O Less than $100,000

O Between $100,000 - $250,000

O Between $250,001 - $500,000

O Between $500,001 - $1,000,000

O Between $1,000,001 - $2,000,000

O More than $2,000,000

O Do not know

APPENDIX TWO

INFORMATION SHEET AND COVERING LETTER

UTAS
FACULTY OF BUSINESS
School of Accounting
& Corporate Governance

Invitation to participate in a survey about the role of financial education in a choice of fund superannuation system.

Dear Colleague,

I would like to invite your participation in this survey as part of my Doctor of Philosophy (Ph.D) degree's research project, at the University of Tasmania.

This study seeks only to survey members of the university sector superannuation fund and who belong to the accumulation superannuation plan (given an investment choice). If you are not a member of university sector superannuation fund or you have a defined benefit superannuation plan please ignore this survey.

It should take you approximately 15 minutes to complete this survey.

To access the survey please click on the following link:

http://www.surveymonkey.com/s.aspx?sm=FSqIrEWYXfcrdk83qc5wcQ_3d_3d

Below is the information sheet for participants, which provides further details about the study and your privacy.

I hope that you will take the time to participate in this study.

Yours sincerely

Michael Ntalianis

What is the study about?
The research project undertaken seeks to evaluate the role financial education plays in providing information, instruction and advice to superannuation fund members about their superannuation savings and

investment strategy. As a member of the University based accumulation fund you have the ability to exercise investment choice from the various investment options offered to you by your superannuation fund. It is particularly important to identify whether this financial education provided to you by the superannuation fund contributes to you being better informed about your superannuation investment decisions.

Privacy and Confidentiality

To ensure the validity of results, a reply to the attached questionnaire would be greatly appreciated. While your cooperation in completing the questionnaire is valued, your participation is voluntary. It is important to note that the results from this survey will be used only in an aggregated form and therefore your anonymity and the confidentiality of your responses are assured. The completed questionnaire will be securely stored and available only to the supervisors and myself. The only people to have access to the details of the questionnaires are my supervisors, external examiners, University of Tasmania and myself.

This project has been approved by the Human Research Ethics Committee of the University of Tasmania (Approval No: H9847).

Nature and extent of your participation

The questionnaire includes questions seeking information about: Educational seminars; Superannuation fund sponsored websites; Superannuation fund written communications; and Superannuation provided financial counselling. It will take approximately 15 minutes to complete the questionnaire. Your decision to complete and submit the questionnaire is taken as consent that you have read the information on this information sheet and that you understand the procedures, that your questions have been answered to your satisfaction, that you understand that you don't have to answer any question, and that you have voluntarily chosen to participate in this study.

I thank you for taking the time to read the information sheet and I express a hope that you will be willing to participate in the study. Your participation would therefore be highly appreciated and I look forward to receiving your completed questionnaire.

Should you have any queries regarding the project or questionnaire, please feel free to contact me on (03 9919 5048) or e-mail me at: michael.ntalianis@vu.edu.au or my principal supervisor, Professor Victoria Wise, on e-mail: victoria.wise@utas.edu.au, or if you have any concerns of an ethical nature or complaints about the manner in which the project is conducted, you may contact the Executive Officer of the Human Research Ethics Committee (Tasmania) Network on (03 6226 7479) or human.ethics@utas.edu.au.

APPENDIX THREE

Ethics Approval Letter from University of Tasmania

Private Bag 01 Hobart
Tasmania 7001 Australia
Telephone (03) 6226 2764
Facsimile (03) 6226 7148
Marilyn.Knott@utas.edu.au
http://www.research.utas.edu.au//index.htm

MEMORANDUM

HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

UTAS

MINIMAL RISK ETHICS APPLICATION APPROVAL

18 January 2008

Professor Victoria Wise
Accounting and Corporate Governance
Private Bag 86
Hobart

Ethics reference: H9847

The role of Financial education in a Choice of Fund Superannuation System.

PhD candidate: Michael Ntalianis

Dear Professor Wise

Acting on a mandate from the Tasmania Social Sciences HREC, the Chair of the committee considered and approved the above project on 10 January 2008.

All committees operating under the Human Research Ethics Committee (Tasmania) Network are registered and required to comply with the *National Statement on the Ethical Conduct in Research involving Humans 1999* (NHMRC guidelines).

Therefore, the Chief Investigator's responsibility is to ensure that:

1) All researchers listed on the application comply with HREC approved application.
2) Modifications to the application do not proceed until approval is obtained in writing from the HREC.
3) The confidentiality and anonymity of all research subjects is maintained at all times, except as required by law.
4) Clause 2.37 of the *National Statement* states:
   An HREC shall, as a condition of approval of each protocol, require that researchers immediately report anything which might warrant review of ethical approval of the protocol, including:
   a) *Serious or unexpected adverse effects on participants;*
   b) *Proposed changes in the application; and*
   c) *Unforeseen events that might affect continued ethical acceptability of the project.*

   The report must be lodged within 24 hours of the event to the Ethics Executive Officer who will report to the Chairs.

5) All participants must be provided with the current Information Sheet and Consent form as approved by the Ethics Committee.

6) The Committee is notified if any investigators are added to, or cease involvement with, the project.

7) This study has approval for four years contingent upon annual review. An *Annual Report* is to be provided on the anniversary date of your approval. Your first report is due [12 months from 'Ethics Committee Approval' date]. You will be sent a courtesy reminder by email closer to this due date.
Clause 2.35 of the National Statement states:
As a minimum an HREC must require at regular periods, at least annually, reports from principal researchers on matters including:
   a) *Progress to date or outcome in case of completed research;*
   b) *Maintenance and security of records;*
   c) *Compliance with the approved protocol, and*
   d) *Compliance with any conditions of approval.*

8) A *Final Report* and a copy of the published material, either in full or abstract, must be provided at the end of project.

Yours sincerely

Ethics Executive Officer

APPENDIX FOUR

DETAILS OF SAMPLE

Details of Sample

UNIVERSITY	Faculties, Departments, Divisions and Schools
Edith Cowan University	School of Law and Justice, School of Management, School of Marketing, Tourism and Leisure, School of Engineering and Finance and Business Service Centre.
Murdoch University	School of Information Technology, School of Media Communication and Culture, School of Social Sciences and Humanities, Library Staff.
Curtin University of Technology	School of Education, School of Media and Information, School of Social Sciences, School of Economics and Finance, School of Management, School of Marketing, School of Information Systems, School of Accounting, Library Staff.
University of Canberra	School of Design and Architecture, School of Health Sciences, School of Resource, Environmental & Heritage Sciences, Faculty of Education, Faculty of Business and Government, Financial Services.
University of Tasmania	School of Aquaculture, School of Earth Sciences, School of Plant Science, School of Zoology, School of Geography and Environmental Studies, IT Resources.
Charles Darwin University	School of Law and Business, School of Creative Arts & Humanities, School of Indigenous Knowledge Systems, Library Staff.
University of Adelaide	School of Medical Sciences, School of Anatomical Sciences, School of Pathology, School of Pharmacology, School of Psychology, Human Resources, Faculty Office for Humanities & Social Sciences, Library Staff, Financial Services, Faculty of Health Sciences Administration Staff.
Flinders University	School of Education, School of Drama, School of Cultural Tourism, Legal Studies & Professional Studies, Human Resources Systems, Payroll Services and Salary Packaging, Building and Property.
James Cook University	School of Education, School of Business, School of Creative Arts, Faculty of Arts, Education & Social Sciences Administration Staff, Faculty of Science, Engineering & Information Technology Staff.
University of the Sunshine Coast	School of Management, School of Commerce, School of Communication, School of Social Sciences, Faculty of Science, Health & Education – Technical Services Staff and Faculty Administrative Staff.
Southern Cross University	School of Arts & Social Sciences, School of Environmental Science & Management, School of Tourism & Hospitality Management, Library Staff
University Of Queensland	School of Civil Engineering, School of Physical Sciences, Faculty of Business, Economics and Law Administration Staff.
Central Queensland University	Faculty of Business & Informatics, Faculty of Arts,

	Humanities & Education, Division of Human Resources.
Griffith University	School of Education & Professional Studies (Brisbane, Logan and Gold Coast), Executive Services, Strategic and Business Services, Remuneration and Benefits.
Victoria University	School of Education, School of Human Movement, Recreation & Performance, School of Tourism, Hospitality & Marketing, School of Nursing and Widwifery, Library staff, Centre for Integrated Learning.
Deakin University	School of Accounting, School of Economics & Finance, Deakin Business School, School of Information Systems, School of Management, School of Education, School of Communication & Creative Arts, School of International & Political Studies, Division of Student Administration, Financial and Business Services Division.
Melbourne University	School of Accounting, School of Management & Marketing, School of Culture and Communication, School of Historical Studies, School of Culture and Communication, Human Resources – Client Services.
Monash University	Medical School - Gippsland, School of Nursing and Midwifery, Victorian College of Pharmacy – Senior Staff, Teaching and Research staff, Administrative staff, Equity & Diversity Centre, Corporate Finance.
Latrobe University	School of Communication Sciences, School of Social Work & Social Policy, School of Occupational Therapy, School of Accounting, School of Economics & Finance, School of Management & Marketing, Buildings & Grounds Division, Record Services, School of Business – Administration.
University of Ballarat	School of Human Movement and Sport Sciences – Academic, Administrative & Technical Staff, Unisport Staff, School of Business, Student Services, Science and Engineering – Technical & Administration Staff, Human Resources Staff.
Australian Catholic University	School of Religious Education, School of Educational Leadership, School of Psychology (Victoria & QLD).
University of New England	School of Humanities, School of Arts, School of Environmental and Rural Science, School of Business, Economics & Public Policy, Research Services, Marketing & Public Affairs.
Macquarie University	Department of English, Department of Computing, Department of Mathematics, Department of Electronic Engineering, Department of Psychology, Office of Financial Services
University of Wollongong	School of Biological Sciences, School of Chemistry, School of Earth & Environmental Sciences, School of History & Politics, School of Social Sciences, Media & Communication, Administration Personnel Services.

University of Technology Sydney	School of Finance & Economics, School of Leisure, Sport & Tourism, School of Management, School of Marketing, School of Accounting, Faculty of Business – Administration Staff.
University of NSW	School of Law, School of Economics, School of Education, School of Organisation & Management, International Office.

Bibliography

ABC News 2009. 'Credit Crunch Delays Baby Boomers' Retirement,' viewed 12 March 2009, <http://www.abc.net.au/news/stories/2009/03/022505244.htm.>

Abrami, P.C., Cholmsky, P., & Gordon, R. 2001, *Statistical Analysis for the Social Sciences: An Interactive Approach*, Allyn and Bacon, Boston.

ABS Australian Bureau of Statistics 2008, Employment Arrangements, Retirement and Superannuation, Australia, April to July 2007, Cat no. 6361.0, Australian Government, Canberra.

ABS Australian Bureau of Statistics 2004, *Australian Social Trends*, Cat no. 4102.0, Australian Governement, Canberra.

Aggarwal, R. 2004, 'Persistant Puzzles in International Finance and Economics,' *Economic and Social Review*, vol. 35, no. 3, pp. 241-250.

Agnew, J.R. & Szykman, L.R. 2005, 'Asset Allocation and Information Overload: The influence of Information Display, Asset Choice, and Investor Experience', *Journal of Behavioural Finance,* vol. 6, no. 2, pp. 57-70.

AIST Australian Institute of Superannuation Trustees 2008a, Co-Contribution Report, April 2008, viewed 27 February 2009, <http://aist.asn/Pages?polResAdv/documents/AISTcontsreport_highres.pdf>

AIST Australian Institute of Superannuation Trustees 2008b, Report on Financial Crisis, AIST Background paper No 4, 15 October 2008, viewed 8 February 2009, http://www.aist.asn.au/Pages/PolResAdv/documents/AISTResearch_ReportonFinancialCrisis.pdf

Aizcorbe, A. Kennickell, A. & Moore, K. 2003, 'Recent Changes in U.S. Family Finances: Evidence from 1998 and 2001 Survey of Consumer Finances', *Federal Reserve Bulletin*, January, pp. 1-32.

Alliance Strategic Research, 2008, Superannuation as a Social Policy – Retirement Adequacy, viewed 25 February 2009, <http://www.allianceresearch.com.au/docs/Superannuation_as_a_social_policy_Retirement_adequacy.pdf>

Alreck, P. L., & Settle, R.B. 1985, *The Survey Research Handbook*, Irwin, Homewood, Illinois.

Americk, J., Caplin, A. & Leahy, J. 2003, 'Wealth Accumulation and the Propensity to Plan', *The Quarterly Journal of Economics*, vol. 118, no. 3, pp. 1007-1047.

Ando, A. & Modigliani, F. 1963, 'The Life-Cycle Hypothesis of Saving: Aggregate Implications and Tests', *American Economic Review*, no. 53, pp. 55-84.

ANOP Research Services. 2006, Consumer Attitudes and Plans in the Light of Recent Government Policy Changes to Superannuation – 2006, *ASFA Conference 2006: Super-Going the Distance, Perth.*

ANZ 2008, ANZ Survey of Adult Financial Literacy in Australia: Summary Report, October 2008, viewed 16 January 2009, <http://www.anz.com/Documents/AU/Aboutanz/AN_5654_Adult_Fin_Lit_Report_08_Web_Report_full.pdf>

ANZ A.C.Nielsen. 2005, 'Adult Financial literacy, Personal Debt and Financial Difficulty in Australia'- Summary Report, viewed on 8 August 2008, <http://www.anz.com/aus/aboutanz/Community/Programs/pdf/ANZ_SumReport_FA.pdf>

APRA Australian Prudential Regulation Authority 2009a, Quarterly Superannuation Performance, December Quarter 2008, March, NSW, viewed 10 April 2009, <http://www.apra.gov.au/Statistics/upload/December-2008-Quarterly-Superannuation-Performance.pdf>

APRA Australian Prudential Regulation Authority 2009b, Statistics Annual Superannuation Bulletin Year ended June 2008, March, NSW, viewed 10 April 2009, <http://www.apra.gov.au/Statistics/upload/June-2008-Annual-Superannuation-Bulletin-3.pdf>

APRA Australian Prudential Regulation Authority 2007, Insight – Celebrating 10 years of superannuation data collection 1996-2006, Issue 2, Special Edition, NSW.

Archer, T.M. 2007, 'Characteristics Associated with Increasing the Response Rates of Web-Based Surveys', Vol. 12, No. 12, viewed 8 October, <http://pareonline.net/getvn.asp?v=12&n=12>

Arnone, W.J. 2004, 'Educating Pension Plan Participants', *Pension Research Council Working Paper 2004-07,* Pension Research Council, University of Pennsylvania, Philidelphia.

ASFA Association of Superannuation Funds of Australia 2009a, Harmer Review – Helping Australians Achieve Dignity in Retirement, viewed 3 March 2009, <http://www.superannuation.asn.au/au/mr090227-2/default.aspx>

ASFA Association of Superannuation Funds of Australia 2009b, Henry Retirement Income Consultation Paper, ASFA submission, February 2009, viewed 10 March 2009, <http://www.superannuation.asn.au/submissions/default.aspx>

ASFA Association Superannuation funds of Australia 2008, Food, Petrol and Holidays Drive Up Retirement costs, viewed 17 February 2009, <http://www.superannuation.asn.au/mr081209/defualt.aspx>

ASFA Association Superannuation Funds of Australia 2007, Planning and Saving Now, viewed 4 March 2009, <http://www.superannuation.asn.au/consumers2-1/default.aspx>

ATO Australian Taxation Office 2009a, viewed 11 February 2009, <http://www.ato.gov.au/individuals/content.asp?doc=/content/42616.htm&pc=001/007/114/001/001&mnu=&mfp=&st=&cy=1>

ATO Australian Taxation Office 2009b, viewed 9 March 2009, <http://www.ato.gov.au/individuals/pathway.asp?pc=001/002/064>

ATO Australian Taxation Office 2008, Guide for Employers- Superannuation Guarantee: How to Meet your Super Obligations, NAT 1987-04.2008, Australian Government Canberra.

ATO Australian Taxation Office 2007, Role and Responsibilities of Trustees: Operating a Self Managed Superannuation Fund, NAT 11032-07.2007, Australian Government Canberra.

AXA 2008, AXA Retirement Scope Report 2008, AXA, Melbourne, Australia.

Babbie, E. 2008, *The Basics of Social Research*, 4th Edition, Thomson Wadsworth, Belmont CA.

Bakeman, R., & Robinson, B. F. 2005, *Understanding Statistics in the Behavioural Sciences*, Lawrence Erlbaum, Mahwah, NJ.

Barber, B.M. & Odean, T. 2001, 'Boys will be Boys: Gender, Overconfidence, and Common Stock Investment', *The Quarterly Journal of Economics*, vol. 116, no. 1, pp. 261-292.

Barber, B.M. & Odean, T. 2000, 'Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors', *The Journal of Finance*, vol. 55, no. 2, pp. 773-806.

Bateman, H. 2008, Australia's Lost Superannuation (Retirement Saving) Accounts, *Prepared for presentation at the 2008 General Assembly of the Japan pension Research Council (JPRC),* September 2008, Tokyo, pp. 1-29

Baxter, L., Hughes, C., & Tight, M. 2006, *How to Research*, 3rd Edition, Open University Press, New York.

Bayer, P. Bernheim, D. & Scholz, K. 1996, 'The Effects of Financial Education in the Workplace: Evidence from Survey of Employers', *NBER Working Paper Series*, Working Paper, no. 5655, Cambridge, MA.

Beal, D. & Delpachitra, S. 2004, 'Community Understanding of Superannuation', *Agenda*, vol. 11, no. 2, pp. 127-142.

Bell, E. & Lerman, R.I. 2005, 'Can Finanical Literacy Enhance Asset Building?', *The Urban Institute*, no. 6, September, pp.1-8.

Belsky, G. & Gilovich, T. 2000, *Why Smart People Make Big Money Mistakes and How to Correct Them: Lessons From the New Science of Behavioral Economics*, Simon & Schuster, New York.

Benartzi, S. 2008, Behavioural Finance, the Market Crisis and Retirement Savings, Comments Presented to the House Education and Labor Committee on October 22 2008, viewed 13 March 2009, <http://edlabor.house.gov/testimony/2008-10-22-ShlomoBenartzi.pdf>

Benartzi, S. 2001, 'Excessive Extrapolation and the Allocation of 401(k) Accounts to company Stock", The *Journal of Finance*, vol. 56, no. 5, pp. 1747-1764.

Benartzi, S & Thaler, R.H. 2007, 'Heuristics and Biases in Retirement Savings Behavior', The *Journal of Economic Perspectives*, vol. 21, no. 3, pp. 81-104.

Benartzi, S & Thaler, R.H. 2001, 'Naïve Diversification Strategies in Defined Contribution Savings Plans', *The American Economic Review,* vol. 91, no. 1, pp. 79-98.

Benartzi, S & Thaler, R.H. 1999, 'Risk Aversion or Myopia? Choices in Repeated Gambles and Retirement Investment', *Management Science,* vol. 45, no. 3, pp. 364-381.

Bernheim, D.B. & Garrett, D.M. 2003, 'The Effects of Financial Education in the Workplace: Evidence from a Survey of Households', *Journal of Public Economics*, vol. 87, pp. 1487-1519.

Bernheim, D.B. (1998), 'Financial Illiteracy, Education, and Retirement Saving', in, *Living with Defined Contribution Pension*, (eds.) O. Mitchell & S. Schieber, University of Pennsylvania Press, Philidelphia.

Bernstein, P.L. 1996, *Against the Gods*, John Wiley & Sons Press, New York.

Bogen, K. 1996, 'The Effect of Questionnaire Length on Response Rates – A Review of the Literature', *Proceedings of the Survey Research Methods Section, American Statistical Association*, Alexandria, pp. 1020-1025.

Bourque, L.B. & Fielder, E.P. 2003, *How to Conduct Self-Administered and Mail Surveys*, 2nd Edition, SAGE Publishing, Thousands Oaks, CA.

Bouma, G.D. & Ling, R. 2004, *The Research Process*, 5th Edition, Oxford University Press, New York.

Bradburn, N.M., Sudman, S., & Wansink, B. 2004, *Asking Questions*: *The Definitive Guide to Questionnaire Design: For Market Research, Political Polls and Social and Health Questionnaires*, Jossey-Bass, San Francisco.

Bradburn, N.M. & Sudman, S. 1979, *Improving Interview method and Questionnaire Design*, Jossey-Bass, San Francisco.

Brace, I. 2004, *Questionnaire Design: How to plan, Structure and Write Survey Material for Effective Market Research*, Kogan Page Publishers, London.

Broadbent, J., Palumbo, M. & Woodman, E. 2006, The Shift from Defined Benefit to Defined Contribution Pension Plans- Implications from asset Allocation and risk Management, *Prepared for a Working Group on Institutional Investors, Global and Asset Allocation, Established by the Committee on the Global Financial System*, December 2006, viewed 10 December 2008, <http://www.bis.org/pub/wgpapers/cgfs27broadbent3.pdf>

Brown, J.R., Liang, N. & Weisbenner, S. 2007, 'Individual Account Investment Options and Portfolio Choice: Behavioral Lessons from 401(k) Plans", *Journal of Public Economics*, vol.91, pp. 1992-2013.

Brown, K., Gallery, G., Gallery, N.& Guest, R. 2004, 'Employees' Choice of Superannuation Plan: Effects of Risk Transfer Costs', *The Journal of Industrial Relations*, vol 46, no 1, pp.1-20.

Brown, K., Gallery, G. & Gallery, N. 2002, 'Informed Superannuation Choice: Constraints and Policy resolutions', *Economic Analysis and Policy,* vol. 32, no. 1, pp. 71-90.

Bryman, A., & Bell, A. 2007, *Business Research Methods*, 2nd Edition, Oxford University Press Publishing, Oxford.

Bryman, A. 2004, *Social Research Methods*, 2nd Edition, Oxford University Press, Oxford.

Calvert. L.E., Campbell, J. Y. & Sodini, P. 2007, 'Down or Out: Assessing the Welfare Costs of Household Investment Mistakes', *Journal of Political Economy*, vol. 115, no. 5, pp. 707-747.

Campbell, D.T., & Stanley, J.C. 1966, *Experimental and Quasi-experimental Designs for Research*, Rand McNally, Chicago.

Carmines, E. G., & Zeller, R.A. 1979, *Reliability and Validity Assessment*, Sage Publications, Newbury Park, CA.

CEDA Committee for Economic Development of Australia 2004, Australia's Ageing Population: Meeting the Challenge, February 2004, viewed 18 August 2007, <http://www.ceda.com.au/public/publications/policy/docs/ageing_policy_statement.pdf>

Centrelink 2009, Department of Human Services, Viewed 3 February 2009, <http://www.centrelink.gov.au/internet/internet.nsf/payments/age_rates.htm>

Chan, K., Ng, L.K. & Covrig, V. 2007, 'Does Home Bias Affect Firm Value? Evidence from Holdings of Mutual Funds Worldwide,' Working Paper, Available at <SSRN: http://ssrn.com/abstract=970396>

Choi, J.J. Liabson, D. Madrian, B. & Metrick, A. 2002, 'Defined Contribution Pensions Plan Rules, Participation Decisions, and The Path of Least Resistance', *Tax Policy and the Economy*, vol. 16, pp. 67-113.

Choi, J.J., Liabson, D., Madrian, B.& Metrick, A. 2001, 'For Better or For Worse: Default Effects and 401(k) Savings Behavior,' *NBER Working Paper Series,* Working Paper no. 8651, Cambridge, MA.

Clare, R 2008a, Retirement Savings Update, February, ASFA, Sydney, pp. 1-12.

Clare, R. 2008b, The Age Pension, Superannuation and Australian Retirement Incomes, ASFA, Sydney, pp.1-29.

Clare, R. 2007, Are Retirement Savings on Track?, ASFA Research and Resource Centre, June, 2007, Sydney, pp.1-19.

Clare, R. 2006, The Introduction of Choice of Superannuation Fund – Results to Date, ASFA Research Centre, February 2006, Sydney, pp. 1-5.

Clare, R. 2005, Implications of Choice of Superannuation Fund Legislation for Members, Employees and Funds, ASFA Research Centre, February 2005, Sydney, pp.1-4.

Clark, L. R., d'Ambrosio, B. M., McDermed, A. A. & Sawant, K. 2003, 'Retirement Plans and Savings decisions: The Role of Information and Education', *Journal of Pension Economics and Finance*, vol. 5, no. 1, pp. 45-67.

Clark-Murphy, M. Kristofferson, I. & Gerrans, P. 2002, 'What Makes Superannuation Decisions Difficult', *International Journal of Business Studies*, vol 10, no. 1, pp. 90-112.

Clark-Murphy, M. & Gerrans, P. 2001, 'Consultation and Resource Usage in retirement Savings Decisions: Australian Evidence of Systematic Gender Differences,' *Financial Services Review*, vol. 10, pp. 273-290.

Clark, R. & Schieber, S. 1998, 'Factors Affecting Participation Rates and Contribution Levels in 410(k) Plans', ,in *Living with Defined Contribution Plans*, (eds.) O.Mitchell and S. Schieber*,* University of Pennsylvania Press, Philadelphia.

Cobanoglu, C., Warde, B., & Moreo, P.J. 2001, 'A Comparison of Mail, Fax and Web-based Survey Methods', *International Journal of Market Research*, vol. 43 no. 4, pp. 441-452.

Connolly, P., 2007, *Quantitative data Analysis in Education: A Critical Introduction Using SPSS*, Routledge, New York.

Converse, J.M., & Presser, S. 1986, *Survey Questions: Handcrafting the Standardized Questionnaire*, Sage Series No. 63, Sage Publications, Thousand Oaks, CA.

Cook, C., Heath, F. & Thompson, R.L. 2000, 'A Meta-Analysis of Response Rates in Web-or Internet-based Surveys, *Educational and Psychological Measurement*, vol. 60, pp. 821-836.

Corrs Chambers Westgarth 2009, 'Superannuation Reforms Continue: Federal Budget 2009-2010', *Corrs in Brief*, 13 May 2009, viewed 15 May 2009, <http://www.corrs.com.au/corrs/website/web.nsf/Content/Pub_InBrief_Superannuation_Federal_Budget_130509/$FILE/5111742_InBrief_Superannuation_Federal_Budget_09.pdf>

Crawford, S.D., Couper, M.P., & Lamias, M.J. 2001, 'Web Surveys: Perceptions of Burden,' *Social Science Computer review*, vol. 19, no. 2, pp. 146-162.

Crompton, R., & Birkelund, G. 2000, 'Employment and Caring in British and Norwegian Banking,' *Work Employment and Society*, vol. 14, pp. 331-352.

Cronbach, L. J. 1951, 'Coefficient Alpha and the Internal Structure of tests,' *Psychometrika*, vol. 16, pp. 297-334.

Czaja, R., & Blair, J. 2005, *Designing Surveys: A Guide to Decisions and Procedures*, 2nd Edition, Pine Forge Press, Thousand Oaks, CA.

David, M. & Sutton, C. 2004, *Social Research – The Basics*, Sage Publications, London.

DeMarrais, K.D., & Lapan, S.D. 2004, *Foundations of Research: Methods of Inquiry in Education and Social Sciences*, Lawrence Erlbaum, Mahwah, NJ.

Department of Education, Employment and Workplace Relations 2007, Higher Education Statistics Collections, Australian Government, Canberra, viewed on 1 December 2008, <http://dest.gov.au/sectors/higher_education/publication_resources/statistics/publications_higher_education_statistics_collections.htm>

De Vaus, D.A. 2002, *Surveys in Social Research, 5th Edition*, Allen and Unwin, Sydney.

DeVellis, R. F. 2003, Scale Development: *Theory and Applications,* 2nd Edition*, Applied Social Research Methods Series*, Volume 26, Sage Publications, London

Dillman, D.A. 2007, *Mail and Internet Surveys - The Tailored Design Method, 2nd Edition, 2007 Update*, John Wiley & Sons Inc, Hoboken, NJ.

Dillman, D.A., Singer, E., Clark, J. R., & Treat, J. B. 1996, 'Effects of Benefits Appeals, Mandatory Appeals, and Variations in Statements of Confidentiality on Completion Rates for Census Questionnaires', *Public Opinion Quarterly*, vol.60, pp.376-389.

Dillman, D.A., Sinclair, M.D. & Clark, J.K. 1993, 'Effect of Questionnaire Length, Respondent-Friendly Design and a Difficult Question on Response Rates for Occupant-Addressed Census mail Surveys,' *Public Opinion Quarterly*, vol. 57, pp. 289-304.

Dolvin, S. & Templeton, W.K. 2006, 'Financial Education and Asset Allocation,' *Financial Services Review*, vol. 15, pp. 133-149.

Drabsch, T. 2004, Ageing in Australia, Briefing Paper no 12/04, NSW Parliamentary Library Research Service, NSW, September.

Duflo, E. & Saez, E. 2003, 'The role of Information and Social Interactions in Retirement Plan Decisions', The *Quarterly Journal of Economics,* vol. 118, no. 3, pp. 815-842.

Duflo, E & Saez, E. 2002, 'Participation and Investment Decisions in a Retirement Plan: The Influence of Colleague Choices', *Journal of Public Economics,* vol. 85, pp. 121-148.

Dwyer, P. Gilkeson, J. & List, J. 2002, 'Gender Differences in Revealed Risk Taking: Evidence from Mutual Fund Investors, *Economics Letters,* vol. 96, no. 2, pp. 151-159.

Easterby-Smith, M., Thorpe, R & Lowe, A. 2002, *Management Research: An Introduction*, 2nd Edition, Sage Publications, London.

Easterby-Smith, M., Thorpe, R. & Lowe, A. 1991, *Management Research: An Introduction*, Sage Publications, London.

Edminston, K.D. & Gillet-Fisher, M.C. 2006, 'Financial Education at the Workplace: Evidence From a Survey of Federal Reserve Bank Employees,' Community Affairs Working Paper 06-02. viewed 15 December 2008, <http://www.kc.frb.org/comaffrs/GilletFisher_Edminston_Financial_Education_April_2006.pdf>

Engström, S. & Westerberg, A. 2003, 'Which Individuals Make Active Investment Decisions in the New Swedish Pension System?' *Journal of Pension Economics and Finance*, vol. 2, no. 3, pp. 225-245.

Ernst &Young LLP Human Capital Practice 2004, 'The Role That Financial Education Programs Play in Influencing Participant in 401(k) Plans', Ernst & Young, viewed 20 October 2006, <http://www.ey.com/global/download/download.nsf/US?Financial_Education_Programs_in_401k_Plans/$file/Fin_Ed_401k_plans.pdf>

FaHCSIA Department of Families, Housing, Community Services and Indigenous Affairs 2008a, Inquiry into the cost of living pressures on older Australians, Occasional Paper no. 21, Australian Government, Canberra, pp. 1-52.

FaHCSIA Department of Families, Housing, Community Services and Indigenous Affairs 2008b, Pension Review Background Paper, Australian Government, viewed 3 March 2009, <http://www.facs.gov.au/seniors/pension_review>

FaHCSIA Department of Families, Housing, Community Services and Indigenous Affairs 2004, Policy research Paper No. 13, viewed 20 February 2009, <http://facsia.gov.au/research/prp13/sec4.htm>

Financial Services Reform Act 2001 (Cwlth)

Fink, A. 2006, *How to Conduct Surveys: A Step by Step Guide*, 3rd Edition, Sage Publications, Thousands Oaks, CA.

Fink, A. 2003, *How to Sample in Surveys*, Sage Publications, Thousand Oaks, CA.

Fowler, F.J, 2008, *Survey Research Methods*, Sage Publications, Beverly Hills, LA.

Fox, J., Bartholomae, S. & Lee, J. 2005, 'Building a Case for Financial Education', *The Journal of Consumer Affairs,* vol. 39, no. 1, pp. 195-214.

Fox, R.J., Crask, M.R., & Kim, J. 1988, 'Mail Survey Response Rate: A Meta-Analyis of Selected Techniques for Inducing Response,' *Public Opinion Quarterly*, vol. 66, no. 3, pp. 608-617.

Francis, C. 2004, 'Ownership Society: Why the US Can't Buy In', *The Christian Science Monitor*, vol. 27 September.

Frey, J. H., 2004, 'Telephone Surveys', in M. S. Lwis-Beck, A. Bryman, & T. F. Liao (eds), *The Sage Encyclopedia of Social Science Research Methods*, Vol. 1-3, Sage Publications, Thousands Oaks, CA.

Frino, A., Chen, Z., Hill, A., Comerton-Forde, C. & Kelly, S. 2006, *Introduction to Corporate Finance*, 3rd Edition, Pearson Education, NSW.

Fry, T.R.L., Heaney, R. & McKeown, W. 2007, 'Will Investors Change their Superannuation Fund Given the Choice?', *Accounting and Finance*, vol. 47, no. 2, pp. 267-283.

Galesic, M. 2002, 'Effects of Questionnaire Length on Response rates: Review of Findings and Guidelines for Future research', *5th German Online Research Conference*, Hohenheim.

Gallery, G. & Gallery, N. 2005, 'Paradox of Choice in a Mandatory Pension Savings System: Challenges for Australian Retirement Income Policy,' *Policy & Politics*, vol 33, no 3, pp. 519-532.

Gallery, G. Gallery, N. & Brown, K. 2004, 'Superannuation Choice: The Pivotal Role of the Default Option', *Journal of Australian Political Economy*, no. 53, pp.44-66.

Ganassali, S. 2008, 'The Influence of the Design of Web Survey Questionnaires on the Quality of Responses', *Survey Research methods*, vol. 2, no. 1, pp. 21-32.

Garman, T.E. 1997, 'Retirement Savings and the Poor Financial Behaviors of Workers,' *International Society for Retirement and Life Planning*, vol. 3, no. 2, pp. 3-4.

Gerrans, P., Clark-Murphy, M. & Speelman, C. 2006, 'How Much Investment Choice is Enough for Members?', *Australian Accounting Review*, vol. 16, No. 3, pp.14-22.

Gerrans, P., Gardner, D., Clark-Murphy, M. & Speelman, C. 2006, 'An Investigation of home Bias in Superannuation Investment Choice,' *Economics Papers*, vol. 25, no. 1, pp. 17-31.

Gitman, L.J. Joehnk, M.D. Juchau, R.H. Wheldon, B.J. & Wright, S.J. 2004, *Fundamentals of Investing, 2nd Australian Edition*, Pearson Education, Frenchs Forest, NSW.

Glaser, B. G., & Strauss, A. L. 1967, *The Discovery of Grounded Theory*, Aldine, Chicago.

Gliner, J.A. & Morgan G.A. 2000, *Research Methods in Applied Settings: An Integrated Approach to Design and Analysis*, Lawrence Erlbaum, Mahwah, NJ.

Goyder, J.C. 1982, 'Further evidence on factors Affecting Response Rates to Mailed Questionnaires,' *American Sociological Review*, vol. 47, no. 4, pp. 550-553.

Greenspan, A. 2002, Prepared Statement: Hearings on the State of Financial Literacy and Education in America, U.S. Senate Committee on Banking, Housing and Urban Affairs, February 6, 2002, viewed on 11 May 2007, <http://www.banking.senate.gov/02_02hrg/020502/grnspan.htm>

Groves, R.M., Fowler, F.J., Couper, M.P., Lepkowski, J.M., Singer, E. & Tourangeau, R. 2004, *Survey Methodology*, Wiley, Haboken, NJ.

Gunasingham, B. & Zavone, J. 2005, 'The Psychology of Investor Choice,' *Discussion Paper for the CMSF Conference 2005: The Challenges of Choice*, March 2005, Hobart, Tasmania.

Hamilton, M. & Hamilton, C. 2006, 'Rich Boomer, Poor Boomer: Retirement Prospects for the not-so-lucky Generation', *The Australia Institute*, August 2006, viewed 26 February 2009, <http://www.tai.org.au/file.php?file=WP88.pdf>

Harding, A. 2005, 'Analysing Australia's Ageing Population: A Demographic Picture,' *Paper presented to 'Australia's Ageing Population Summit*, Financial Review Conferences, Sydney, 27 September, pp. 1-5.

Harmer, J. 2009, Pension Review Report, Department of Families, Housing, Community Services and Indigenous Affairs, Australian Government, Canberra, viewed on 15 May 2009, <http://www.fahcsia.gov.au/about/publicationsarticles/corp/Budget09_10/pension/Documents?Pension_Review_Report/PensionReviewReport.pdf>

Helman, R., Greenwald, M., VanDerhei, J. & Copeland, C. 2008, 'The 2008 Retirement Confidence Survey: Americans Much More Worried About Retirement, Health Costs a Big Concern,' Issue Brief No. 316, April, Employee Benefit Research Institute EBRI, Washington, DC.

Helman, R. & Paladino, V. 2004, 'Will Americans Ever Become Savers? The14th Retirement Confidence Survey 2004', *EBRI, Issue Brief, No. 268*, Employee Benefit Research Institute (EBRI), Washington D.C.

Herberlein, T.A., & Baumgartner, R. 1978, 'Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature,' *American Sociological Review*, vol. 43, no. 4, pp. 447-462.

Hershey, D.A. and Mowen, J.C. 2000, 'Psychological Determinants of Financial Preparedness for Retirement', *The Gerontologist*, vol. 40, no. 6, pp. 687-697.

Hershey, D.A., Walsh, D.A., Brougham, R., Carter, S. & Farrell, A. 1998, 'Challenges of Training Pre-Retirees to Make Sound Financial Planning Decisions,' *Educational Gerontology*, vol. 25, no. 5, pp. 447-470.

Hilgert, M., Hogarth, J. & Beverly, S. 2003, 'Household Financial Management: The Connection Between Knowledge and Behavior', *Federal Reserve Bulletin*, July 2003, Washington D.C, pp. 309-322.

Hill, R. 1998. 'What sample Size Is Enough in Internet Survey Research?', *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*, viewed 5 June 5 2008, <http://www.emoderators.com/ipct-j/1998/n3-4/hill.html>

Hogarth, J.M. & Hilgert, M.A. 2002, 'Financial Knowledge, Experience and Learning Preferences: Preliminary Results forma New Survey on Financial Literacy,' *Consumer Interest Annual*, vol. 48, pp. 1-7.

Holland, J.H., Goodman, D. & Stich, B. 2008, 'Defined Contribution Plans Emerging in the Public Sector: The Manifestation of Defined Contributions and the Effects of Workplace Financial literacy Education,' *Review of Public Personnel Administration*, vol. 28, no. 4, pp. 367-384.

Holzman, R. & Hinz, H. 2005, *Old-Age Income Support in the 21st Century: An International Perspective on Pension Systems and Reform*, The World Bank, Washington, D.C.

Hsu, C., & Powers, T.F. 2001, *Marketing Hospitality*, 3rd Edition, John Wiley, New York.

Huberman, G. 2001, 'Familiarity Breeds Investment,' *Review of Financial Studies*, vol. 14, no. 3, pp. 659-680.

Huberman, G. & Jiang, W. 2006, 'Offering Choice in 401(k) Plans: Equity Exposure and Number of Funds, *The Journal of Finance,* vol. LXI, no. 2.

Investment Company Institute 2006, Research Perspective, November, vol. 12, no. 2, Washington, DC.

Iyengar, S., Jiang, W. & Huberman, G. 2004, 'How Much Choice is Too Much:? Contributions to 401(k) Retirement plans*,' in Pension Design and structure: New Lessons from Behavioral Finance*, (eds.) O. Mitchell and S. Utkus, University Press, Oxford.

Iyengar, S. & Kamenica, E. 2007, 'Choice Overload and Simplicity Seeking,' Working Paper, University of Chicago Graduate School of Business, Chicago.

Jansen, J.J. Spink, A. & Taksa, I. 2008, *Handbook of Research on Web Log Analysis*, Information Science Reference, Hershey, PA.

Jensen, K. & Jensen K.B. 2002, *A Hanbook of Media and Communication Research: Qualitative and Quantitative Methodologies*, Routledge, New York.

Jones, C.P., Shamsuddin, A. & Naumann, K. 2007, Investments: Analysis and Management, 2nd Australian Edition, John Wiley, Milton, QLD.

Joo, S & Garman, T. 1998, 'Worksers Want More than Retirement Education at their Workplace: A Report of Research Findings,' *Personal Finances and Worker Productivity*, vol. 2 no. 2, pp. 156-161.

Joo, S. & Grable, J.E. 2005, 'Employee Education and the Likelihood of having a Retirement Savings Program', *Financial Counseling and Planning*, vol. 16, no. 1, pp. 37-49.

Joo, S. & Pauwels, V.W. 2002, 'Factors Affecting Workers Retirement Confidence: A Gender Perspective,' *Financial Counseling and Planning*, vol. 12, no. 2, pp. 1-10.

Kahneman, D. 2003, 'Maps of Bounded Rationality: Psychology for Behavioral Economics,' *American Economic Review*, vol. 93, no. 5, pp. 1449-1475.

Kahneman, D. & Tversky, A. 1979, 'Prospect Theory: An Analysis of Decision under Risk,' *Econometrica*, vol. 47, pp. 263-291.

Kamenica, E. 2008, 'Contextual Inference in Markets: On the Informational Content of Product Lines,' *American Economic Review*, vol. 98, no.5, pp. 2127-2149.

Kaplowitz, M.D., Hadlock, T.D., & Levine, R. 2004, 'A Comparison of Web and Mail Survey Response Rates,' *Public Opinion Quarterly*, vol. 68, no. 1, pp. 94-101.

Kelly, J., & De Graaf, N. D. 1997, 'National Context, Parental Socialization, and Religious Belief: Results from 15 Nations,' *American Sociological Review*, vol. 62, pp. 639-59.

Kerlinger, F.N. 1986, *Foundations of Behavioural Research, 3rd Edition*, Holt Rinehart and Winston, New York.

Kerry, M., Clayton, B. & Olynyk, M. 2007, 'Evaluating the Impact of Financial Literacy Programs on the Retirement Savings of Superannuation Fund Members,' *International Review of Business Research Papers*, vol. 3, no. 1, pp.73-88.

Kervin, J.B. 1992, *Methods for Business Research*, Harper Collins Publishers, New York.

Kim, J., Kwon, J. & Anderson, E.A. 2006, 'Factors Related to Retirement Confidence: Retirement Preparation and Workplace Financial Education,' *The Journal Financial Counselling and Planning*, vol. 16, no. 2, pp. 77-89.

Kim, J., Garman, T. & Quach, A. 2005, 'Workplace Financial Education and Retirement Savings by Employees and their Spouses,' *Journal of Personal Finance*, vol. 4, no. 3, pp. 92-108.

Kim, J. & Garman, T.E. 2003, 'Financial Education and Advice Changes Worker Attitudes and Behaviors', *Journal of Compensation and Benefits,* September/October, pp.7-13.

Kim, J., Bagwell, D.C. & Garman, T. 1998, 'Evaluation of Workplace Personal Financial Education', *Personal Finances and Worker Productivity*, vol. 2, no. 1, pp. 187-192.

Krajnak, P.A., Burns, S.A. & Natchek, S.M. 2008, 'Retirement Education in the Workplace,' *Financial Services Review*, vol. 17, no. 2, pp. 131-141.

Kumar, R. 2005, *Research Methodology: A Step-by-step Guide for Beginners*, 2nd Edition, Sage Publications, London.

Kwak, N., & Radler, B. 2002, 'A Comparison between Mail and Web Surveys: Response Pattern, Respondent Profile, and Data Quality,' *Journal of Official Statistics*, vol. 18, no. 2, pp. 257-273.

Langbein, L.I. & Felbinger, C.L. 2006, *Public Program Evaluation: A Statistical Guide*, M.E. Sharpe, New York.

Leech, N.L., Barrett, K.C. & Morgan, G.A. 2005, *SPSS for Intermediate Statistics – Use and Interpretation, 2nd Edition*, Lawrence Erlbaum, Mahwah, NJ.

Leong, T.L.F., & Austin J.T. 2005 *The Psychology Research Handbook: A Guide for Graduate Students and Research Assistants*, Sage Publications, Thousand Oaks, CA.

Lewis, N.D., 2004, *Operational Risk with Excel and VBA: Applied Statistical Methods for Risk Management*, 2nd Edition, John Wiley, Haboken, NJ.

Liabson, D.I. 1997, 'Golden Eggs and Hyperbolic Discounting,' The *Quarterly Journal of Economics*," vol. 62, May, pp. 443-477.

Liabson, D.I., Repetto, A. and Tobacman, J. 1998, 'Self-Control and Saving for Retirement,' *Brookings Papers on Economic Activity*, vol. 1998, Issue 1, pp.91-172.

Liang, N. & Weisbenner, S. 2002, 'Investor Behavior and the purchase of Company Stock in 401(k) Plans- The Importance of Plan Design,' NBER Working Paper 9131, Cambridge, MA.

Llieva, J., Baron, S., & Healey, N.M. 2002, 'Online Surveys in Marketing Research: Pros and Cons,' *International Journal of Market Research*, vol. 44, no. 3, pp. 361-376.

Loibl, C. & Hira, T.K. 2006, 'A Workplace and Gender-Related Perspective on Financial Planning Information Sources and knowledge Outcomes,' *Financial Services Review*, vol. 15, pp. 21-42.

Loibl, C. & Hira, T.K. 2005, 'Self-Directed Financial Learning and Financial Satisfaction,' *Journal of Financial Counselling and Planning*, vol. 16, no. 1, pp. 11-21.

Lomax, R.G., 2007a, *An Introduction to Statistical Concepts, Edition 2*, Lawrence Erlbaum, Mahwah, NJ.

Lomax, R.G., 2007b *Statistical Concepts: A Second Course, Edition 3*, Lawrence Erlbaum. Mahwah, NJ.

Loveridge, D. 2008, *Foresight: The Art and Science of Anticipating the Future*, Taylor and Francis, London.

Lusardi, A. 2005, 'Saving and the Effectiveness of Financial Education,' in *Pension Design and Structure: New Lessons from Behavioral Finance*, (eds.) O.Mitchell and S. Utkus, Oxford University Press, Oxford.

Lusardi, A. 2003, 'Planning and Saving for Retirement, Working Paper, Dartmouth College.

Lusardi, A. & Mitchell, O.S. 2008, Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth, *Journal of Monetary Economics*, vol. 54, pp. 205-224.

Lusardi, A. & Mitchell, O. S. 2007a, 'Financial Literacy and Retirement Planning: New Evidence from the Rand American Life Panel,' Working Paper 2007-157, University of Michigan Retirement Research Centre, Michigan.

Lusardi, A. & Mitchell, O.S. 2007b, 'Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth,' *Journal of Monetary Economics*, vol. 54, pp. 205-224.

Lusardi, A. & Mitchell, O. S. 2006, 'Financial Literacy and Planning: Implications for Retirement Wellbeing', Pension Research Working Paper, Pension Research Council, Wharton School University of the University of Pennsylvania, Philadelphia.

Madrian, B.C. & Shea, D.F. 2001a, 'The Power of Suggestion: Intertia in 401(k) Participation and Savings Behavior,' *The Quarterly Journal of Economics*, vol. 116. no. 4, pp. 1149-1187.

Madrian, B.C. & Shea, D.F. 2001b, 'Preaching to the Converted and Converting those taught: Financial Education in the Workplace', University of Chicago, Chicago Unpublished paper.

Maki, D. 2004, 'Financial Education and Private Pensions,' In, *Private Pensions and public Policies*, (eds.)W. Gale, J. Shoven & M. Warshawsky, Brookings Institution Press, Washington, DC, pp. 126-139.

Manfreda, K.L & Vehovar, V. 2002, 'Survey Design Features Influencing Response Rates in Web Surveys', Faculty of Social Sciences, Univeristy of Ljubljana, viewed 2 December 2008 <http://www.icis.dk/icis_papers/c2_4_3.pdf.>

Mangione, T. W. 1995, *Mail Surveys: Improving the Quality*, Sage Publications, Thousand Oaks, CA..

Markowitz, H.M. 1952, 'Portfolio Selection', *The Journal of Finance*, vol. 7, no. 1, pp. 77-91.

McCarthy, D.D. & Turner, J.A. 2000, 'Pension Education: Does it Work? Does it Matter?', *Benefits Quarterly*, vol. 16, no. 1, pp.64-72.

McClatchey, C.A. & VandenHul, S.P. 2005, 'The Efficacy of optimization Modelling as a Retirement Strategy in the Presence of Estimation Error,' *Financial Services Review*, vol. 14, pp. 269-284.

McMurray, A.J., Spoonley, P., Pearson, D.G., Pace, R.W. & Scott, D. 2004, *Research: A Commonsense Approach*, Thomson Learning, Southbank, Victoria.

McNair Ingenuity Research 2008, Annual Superannuation Survey Prepared for Association of Superannuation Funds Australia, viewed 10 February 2009, <http://www.superannuation.asn.au/Reports/default.aspx>

Mehra, V. & Mishra, S. 2007, 'The Pension Protection Act and Automatic 401(k) Enrollment: Opportunities and Challenges,' viewed 4 March 2009, <http://www.keane.com/_upload/Documents/WhitePapers?ViewPoint_PPA-401K_042707(1).pdf>

Melbourne Institute of Applied Economic and Social Research 2009, Poverty Lines: Australia, September Quarter 2008, The University of Melbourne, Melbourne, February 2009.

Mercer (2006), Mercer Financial Literacy and Retirement Readiness Study 2006, Mercer Wealth Solutions, Australia, viewed 15 September 2008, <http://www.mercerwelthsolutions.com.au/FinancialLiteracy/abouthestudy/flyoutnav/ >

Mertens, D.M. 2005, *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative, and Mixed Methods*, 2nd Edition, Sage Publications, Thousand Oaks, CA.

Meulbroek, L. 2005, 'Company Stock in Pension Plans: How Costly is it?', *The Journal of Law and Economics*, vol. 48, no. 2, pp. 443-474.

Mitchell, O.S. & Utkus, S.P. 2006, 'How Behavioral Finance Can Inform Retirement Plan Design,' *Journal of Applied Corporate Finance*, vol. 18, no. 1, pp. 82-94.

Mitchell, O.S. & Utkus, S.P. 2003, 'Lessons from Behavioural Finance for Retirement Plan Design,' Pension Research Council Working Paper 6, Wharton School of the University of Pennsylvania, Philadelphia.

Mitchell, O.S. & Schieber, S.J. 1998, 'Defined Contribution Pensions: New Opportunities, New Risks' in *Living with defined contribution pensions: Remaking responsibility for retirement*, (eds.) O. Mitchell & S. Schieber, University of Pennsylvania Press, Philadelphia.

Modigliani, F. & Brumberg, R. 1954, 'Utility Analysis and the Consumption Function: An Interpretation of Cross-Section data', in *Post-Keynesian economics*, (ed.) K.K. Kurihara, Rutgers University Press, New Brunswick, NJ.

Morgan, G.A., Gliner, J.A, & Harmon, R.J. 2006, *Understanding and Evaluating Research in Applied and Clinical Settings*, Lawrence Erlbaum, Mahwah, NJ.

Mohr, L.B. 1993, *Understanding Significance Testing*, 5th Edition, Sage Publications, Newbury Park, CA.

Mullainathan, S. & Thaler, R.H. 2000, 'Behavioural Economics,' *NBER Working Paper Series*, Working Paper no. 7948, Cambridge, MA.

Muller, L.A. 2003, 'Investment Choice in Defined Contribution Plans: The Effects of Retirement Education on Asset Allocation,' *Benefits Quarterly*, vol. 19, no. 2, pp. 76-94.

Nielson, L. 2008, 'Superannuation 2008-2009,' Department of Parliamentary Services, Research paper, no. 6, August, Commonwealth of Australia, Canberra, 2008, pp. 1-29.

Nielson, L. 2007, 'Superannuation and Taxation 2007-2008,' Department of Parliamentary Services, Research Paper, No. 2, August 2007, Commonwealth of Australia, Canberra, pp. 1-31.

Nielson, L. 2006, 'An Adequate Superannuation-Based Retirement Income?', Department of Parliamentary Services, Research Brief, no. 12, March 2006, Commonwealth of Australia, Canberra, pp. 1-37.

Nielson, L. 2005, Super co-contribution – performance to date, Research Note no. 16 2005-2006, Economics Commerce and Industrial Relations Section, viewed 19 February 2009, <http://www.aph.gov.au/library/pubs/rn/2005-06/06rn16.htm>

Nunally, J.C. 1978, *Psychometric Theory*, McGraw-Hill, New York.

Nyce, S. 2005, 'The importance of financial Communication for Participation Rates and Contribution Levels in 401(k) Plans,' Pension Research Council Working Paper 3, Wharton School of the University of Pennsylvania, Philidelphia.

OECD Organisation for Economic Co-operation and Development 2008a, *Improving Financial Education and Awareness on Insurance and Private Pensions*, OECD Publishing, Paris.

OECD Organisation for Economic Co-operation and Development 2008b, Pension Markets in Focus, Issue 5, December 2008, OECD Publishing. Paris.

OECD Organization for Economic Co-operation and Development 2006, 'The Importance of Financial Education,' Policy Brief, July, OECD Observer, Paris.

OECD Organisation for Economic Co-operation and Development 2005, *Improving Financial Literacy: Analysis of Issues and Policies*, OECD Publishing, Paris.

Olsberg, D. 2004, 'Women and Superannuation: Still Missing Out,' *Journal of Political Economy*, no. 53, pp. 161-178.

Oppenheim, A.N. 2001, *Questionnaire Design, Interviewing and Attitude Measurement*, 2nd Edition, Continuum International Publishing, London.

Orszag, M. 2003, 'Who Makes Active Investment Decisions?', *European Pension News*, August.

Papke, L.E. 2003, 'Individuals Financial Decisions in Retirement Saving Plans: The Role of Participant-Direction,' *Journal of Public Economics*, vol. 88, pp. 39-61.

Peirson, G., Brown, R., Easton., S., Howard, P. and Pinder, S. 2006, *Business Finance, 9th Edition*, McGraw-Hill, North Ryde, NSW.

Pension Protection Act of 2006 (Public Law 109-280)

Perry, C. 1995, 'A Structured Approach to Presenting PhD Theses: Notes for Candidates and their Supervisors'*, paper presented to the ANZ Doctoral Consortium*, Univeristy of Sydney, Sydney, Febraury 1994, with later additions to 2 July 1995.

Phelps, R. Fisher, K. & Ellis. A. 2007, *Organising and Managing your Research: A Practical Guide for Postgraduates*, Sage Publications, London.

Porter, S.R., 2004, 'Raising Response Rates: What Works?', *New Directions for Institutional Research*, Issue 121, pp. 5-21.

Porterba, J. Venti, S. & Wise, D.A. 2007, 'New Estimates of the Future Path of 401(k) Assets,' *NBER Working Paper Series*, Working Paper no. 13083, May 2007, Cambridge, MA.

Preston, A. & Jefferson, T. 2002, 'The Economics of Labour Markets and Retirement Provision: Baby Boomers and Gender Differences in Australia', Discussion Paper No. 25, Women's Economic Policy Analysis Unit (WEPAU), Curtain University of Technology, Western Australia, October.

Proctor, M. 1995, 'Measuring Attitudes' in *Researching Social Life*, (ed.) N.Gilbert, Sage Publications, London.

Punch, K. F. 2005, *Introduction to Social Research: Quantitative and Qualitative Approaches, 2nd Edition*, Sage Publications, Thousand Oaks, CA.

Rhine, S. & Toussaint-Comeau, M. 2002, 'Consumer Preferences in the Delivery of Financial Information: A Summary', *Consumer Interests Annual*, vol. 48.

Ritter, L.A., & Sue, V.M. 2007, 'Selecting a Sample', *New Directions for Evaluation, Special Issue: Using Online Surveys in Evaluation*, Issue 115, pp. 23-28.

Rosenthal, D. L., & Jacobson, L. 1968, *Pygmalion in the Classroom: Teacher Expectation and Pupils' Intellectual Development*, Holt, Rinehart & Winston, New York.

Ross, D. & Wills, L. 2002, 'The Shift from Defined Benefit to Defined Contribution Retirement Plans and the Provisioning of retirement Savings,' Discussion Paper PI-0210, The Pension Institute, London, pp.1-31.

Rothman, G. & Bingham, C. 2004, 'Retirement Income Adequacy Revisited,' *Paper Presented to the Twelfth Colloquium of Superannuation Researchers*, University of New South Wales, Sydney, July.

Ruane, J.M. 2004, *Essentials of research Methods: A Guide to Social Science Research*, Blackwell Publishing, Malden, MA.

Saliterman, V. & Sheckley, B.G. 2003, 'Adult Learning and Pension Participant Behavior,' Pension Research Council Working Paper 17, Pension Research Council, Wharton School of the University of Pennsylvannia, Philadelphia.

Salkind, N.J., 2006, *Statistics for People who Think They Hate Statistics: The Excel Edition*, Sage Publications, Thousand Oaks, CA.

Sansone, C., Morf, C.C. & Panter, A.T. 2004, *The Sage Handbook of Methods in Psychology*, Sage Publications, London.

Sapsford, R. 2007, *Survey Research,* 2nd Edition, Sage Publications, Thousand Oaks, CA.

Schofield, W. 1996, 'Survey Sampling', in R.Sapsford and V.Jupp (eds), *Data Collection and Analysis*, Sage Publications, London.

Schonlau, M., Fricker, R.D., & Elliot, M.N. 2001, *Conducting Research Surveys Via E-mail and the Web*, Rand Corporation, Santa Monica, CA.

Schubert, S. 2008, 'Australia vs US: A Scorecard on the Australian and US Defined Contribution System,' *Presented at the 4th Financial Services Forum on Innovation in Financial Markets*, May 2008, Melbourne.

Schuman, H., & Scott, J. 1987, 'Problems in the Use of Survey Questions to Measure Public Opinion,' *Science*, vol. 236, issue 4804, pp. 957-959.

Schuman, H. & Presser, S. 1979, 'The Open and Closed Question,' *American Sociological Review*, vol. 44, pp. 692-712.

Schutt, R.K. 2006, *Investigating the Social World: The Process and Practice of Research*, 5th Edition, Pine Forge Press, Thousand Oaks, CA.

Seale, C. 2004, *Social Research Methods: A Reader*, Routledge, London.

Senate Select Committee 2002, Superannuation and Standards of Living in Retirement – Report on the Adequacy of the Tax Arrangements for Superannuation and Related Policy, December 2002, Parliament of Australia, Canberra.

Shefrin, H. 2002, *Beyond Greed and Fear: Understanding Behavioural Finance and the Psychology of Investing*, 2nd Edition, Oxford University Press, New York.

Shefrin, H.M. & Thaler, R.H. 1988, 'The Behavioral Life-Cycle Hypothesis,' *Economic Enquiry*, vol. XXVI, October, pp. 609-643.

Sherry, N (Minister for superannuation and Corporate Law) 2009, Find Your Lost Super in 2009, Australian Labor Party, Viewed 24 February 2009, <http://www.alp.org.au/media/0109/mssc1051.php>

Shih, T., & Fan, X. 2008, 'Comparing Response Rates from Mail Surveys: A Meta-Analysis,' *Field Methods*, vol. 20, no. 3, pp. 249-271.

Simon, H.A. 1978, 'Rationality as Process and Product of Thought'. *The American Economic Review*, vol. 68, no. 2, pp. 1-16.

Singer, E., von Thurn, D. R., & Miller, E. R. M. 1995 'Confidentiality Assurances and Response: A Quantitative Review of the Experimental Literature,' *Public Opinion Quarterly*, vol. 59, pp. 66-67.

Sirkin, R.M. 1995, *Statistics for the Social Sciences*, Sage Publications, Thousand Oaks, CA.

Solomon, D.J. 2001, 'Conducting Web-Based Surveys,' *Practical Assessment, Research & Evaluation*, vol. 7, no. 19, viewed 20 November 2008, <http://PAREonline.net/getvn.asp?v=7&n=19>

Somekh, B., & Lewin, C. 2005, *Research Methods in the Social Sciences: A Guide for Students and Researchers*, Sage Publications, London.

Spector, P.E. 1992, *Summated Rating Scale Construction: An Introduction*, Sage University Paper Series on Quantitative Applications in the Social Sciences, Series no 07-082, Sage Publications, Newbury Park, CA.

Stanford, J.D. 2004, 'Long-Term Issues in Superannuation: An Overview, *Australian Economic Review*,' vol. 37, June, pp. 180-183.

Stevens, G.R. 2005, 'Finance and the Ageing Population', *Address to the Financial Planning Association of Australia Limited FPA National Conference 2005*, CFP Retreat, Gold Coast, 16 November 2005, Reserve Bank of Australia Bulletin, December, pp. 9-16.

Strauss, A., & Corbin, J. 1994, 'Grounded Theory Methodogy: An Overview,' in *Handbook of Qualitative Research*, (eds.) N. Denzin, & Y. Lincoln, Sage Publications, Thousand Oaks, CA.

Sudman, S., & Bradburn, N. 1982, *Asking Questions: A Practical Guide to Questionnaire Design*, San Fransisco, Jossey-Bass.

Sudman, S., & Bradburn, N. 1974, *Response Effects in Surveys: A Review and Synthesis*, Aldine, Chicago.

Superannuation Guarantee (Administration) Amendment Regulations 2005 (Cwlth)

Superannuation Guarantee (Administration) Act 1992 (Cwlth)

Superannuation Industry (Supervision) Act 1993 (Cwlth)

Superannuation (Reform) Act 2004 (Cwlth)

Superannuation (Resolution of Complaints) Act 1993 (Cwlth)

Superannuation Safety Amendment Act 2004 (Cwlth)

Superannuation Stakeholder Group, 2009, Superannuation in the Context of the Global Financial Crisis, Superannuation Stakeholder Joint Communiqué, 3rd February 2009, pp. 1-4, viewed on 10 February 2009, <http://www.superannuation.asn.au/mr090203/default.aspx>

Superannuation Unclaimed Money and Lost Members Act 1999 (Cwlth)

Super Ratings, 2009, Latest Returns, viewed 25 February 2009 <http://www.superrtings.com.au/latestreturns>

Taylor-Carter, M.A., Cook, K. & Weinberg, C. 1997, "Planning and Expectations of the Retirement Experience", Educational Gerontology, Vol. 23, No. 3, pp. 273-288.

Thaler, R.H. 1994, 'Psychology and Savings Policies', *The American Economic Review*, vol. 84, no. 2, Papers and Proceedings of the Hundred and Sixth Annual Meeting of the American Economic Association, pp. 186-192.

Thaler, R. & Benartzi, S. 2004, 'Save More Tomorrow: Using Behavioural Economics to Increase Employee Saving,' *Journal of Political Economy*, vol. 112, No. 1, pp. 164-187.

Thaler, R.H. & Shefrin, H.M. 1981, 'An Economic Theory of Self-Control,' *Journal of Political Economy*, vol. 89, pp. 392-410.

The American Psychological Association 1985, Standards for Educational and Psychological Testing, APA Press, Washington, DC.

The Treasury 2008a, Superannuation Clearing House and The Lost Members Framework, Discussion Paper, November 2008, Australian Government, Canberra.

The Treasury 2008b, Architecture of Australia's Tax and Transfer System, Commonwealth of Australia, viewed 15 February 2009, http://www.taxreview.treasury.gov.au

The Treasury 2007, Intergenerational Report 2007, Assessing the Long-Run Sustainability of Government Policies, Australian Government, Canberra.

The Treasury 2004, A More Flexible and Adaptable Income System, viewed 13 February 2009, <http://demographics.treasury.gov.au/content/_download/flexible_retirement_income_system/HTML/retirement.asp>

The Treasury 2003, 'Consumer and Financial Literacy Taskforce – Terms of Reference', viewed 4 October 2006, <http://cfltaskforce.treasury.gov.au/contents/terms.asp?NavID=2#attachA>

The Treasury 2002, Intergenerational Report 2002-2003, Budget Paper No. 5, Australian Government, Canberra, viewed 15 Janaury 2009, <http://www.budget.gov.au/2002-03/bp5/html/index.html>

Thomas, S.J. 2004, *Using Web and Paper Questionnaires for Data-based Decision Making: From Design to Interpretation of the Results*, Corwin Press, Thousand Oaks, CA.

Tiessen, P. & Waterhouse, J.H. 1983, 'Towards a Descriptive Theory of Management Accounting,' *Accounting, Organisations and Society*, vol 8, No. 2/3, pp. 251-267.

Tourangeau, R., Rips, L.J., & Rasinski, K. 2000, *The Psychology of Survey Response*, Cambridge University Press, Cambridge.

Trochim, W.M.K. 2006, *Research Methods Knowledge Base*, viewed 14 September 2008, <http://www.socialresearchmethods.net/kb/survsel.php>

Tversky, A. & Kahneman, D. 1974, 'Judgement Under Uncertainty: Heuristics and Biases,' *Science,* vol. 185, pp. 1124-1131.

VanDerhei, J.L. 2007, 'The Expected Impact of Automatic Escalation of 401(k) Contributions on Retirement Income,' *EBRI Notes*, September, vol. 28, no.9, pp.2-8.

VanDerhei, J., Holden, S., Alonso, L. & Copeland, C. 2008, '401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2007,' EBRI Issue Brief No. 324, December 2008.

Venti, S.F. 2004, 'Choice Behavior and Retirement Saving,' in *Oxford Handbook of Pensions and Retirement Income*, (eds.) G. Clark, A. Munnell & M. Orszag, Oxford University Press, Oxford.

Weisberg, H.F. 2005, *The Total Survey Error Approach: A Guide to the New Science of Survey Research*, University of Chicago Press, Chicago.

Wilcox, R.T. 2003 'Bargaining Hunting or Star Gazing? Investors' Preferences for Stock Mutual Funds,' *The Journal of Business,* vol. 76, no. 4, pp. 645-655.

Williams, M. 2003, *Making Sense of Social Research*, Sage Publications, London.

World Bank 1994, *World Development Report: Infrastructure for Development*, World Bank Publications, Washington D.C.

Worthington, A.C. 2008, 'Knowledge and Perceptions of Superannuation in Australia,' *Journal of Consumer Policy*, vol. 31, no. 3, pp. 349-368.

Wright, K.B. 2005, 'Researching Internet-based populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services', Journal of Computer-Mediated Communication, vol. 10, no. 3, Article 11, viewed 24 October 2008 <http://jcmc.indiana.edu/vol10/issue3/wright.html>

Wright, B. & Stone, M. 1999, *Measurement Essentials, 2nd Edition*, Wide Range Inc, Wilmington, DE.

Yang, K. & Miller, G.J. 2007, *Handbook of Research Methods in Public Administration- Public Administration and Policy/134*, CRC Press, Haboken, NJ.

Yu, J., & Cooper, H. 1983, 'A Quantitative Review of Research Design on Response Rates in Questionnaires,' *Journal of Marketing Research*, vol. 20, pp. 36-44.